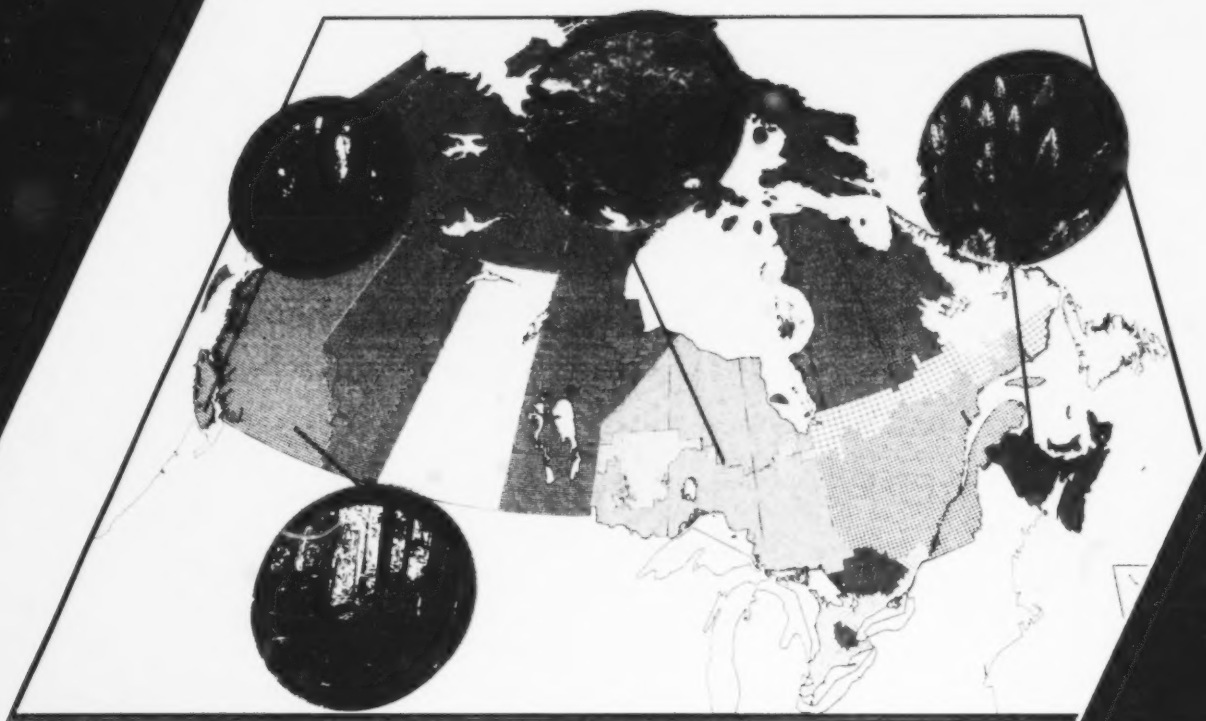
CFS CANADIAN FOREST SERVICE

Canada's Forest Inventory 2001

Katja Power and Mark Gillis

Natural Resources Canada • Canadian Forest Service
Pacific Forestry Centre • Victoria, British Columbia
Information Report • BC-X-408



Natural Resources Canada | Ressources naturelles Canada

Canada

The Pacific Forestry Centre, Victoria, British Columbia

The Pacific Forestry Centre of the Canadian Forest Service undertakes research as part of a national network system responding to the needs of various forest resource managers. The results of this research are distributed in the form of scientific and technical reports and other publications.

Additional information on Natural Resources Canada, the Canadian Forest Service, and Pacific Forestry Centre research and publications is also available on the World Wide Web at: **cfs.nrcan.gc.ca/regions/pfc.** To download or order additional copies of this publication, see our online bookstore at: **bookstore.cfs.nrcan.gc.ca.**

Canada's Forest Inventory 2001

Katja Power and Mark Gillis

Natural Resources Canada
Canadian Forest Service
Pacific Forestry Centre
Victoria, BC

Natural Resources Canada
Canadian Forest Service
Pacific Forestry Centre
Information Report BC-X-408

2006

Canadian Forest Service
Pacific Forestry Centre
506 West Burnside Road
Victoria, British Columbia
V8Z 1M5
Phone (250) 363-0600

cfs.nrcan.gc.ca/regions/pfc

© Her Majesty the Queen in Right of Canada, 2006

ISSN 0830-0453
ISBN 0-662-44429-9
Printed in Canada

Cette publication est aussi disponible en français.

Library and Archives Canada Cataloguing in Publication

Power, K. (Katja)
Canada's forest inventory 2001 / Katja Power, Mark Gillis.

(Information report BC-X-408)
"...replaces Canada's forest inventory 1991: the 1994 Version" — Abstract
Includes bibliographical references.
Available also on the Internet.
Includes an abstract in French.
ISBN 0-662-44429-9
Cat. no.: Fo143-2/408E

1. Forests and forestry--Canada. 2. Forest surveys--Canada.
I.Gillis, M. D. II. Pacific Forestry Centre III. Title. IV. Series:
Information report (Pacific Forest Research Centre) BC-X-408.

SD145 G54 2006 333.75'11'0971 C2006-980324-2

2007-01780/

Contents

Abstract / Résumé v
Contributors to the Inventory vi
Acknowledgements vii
Highlights viii

1. Introduction 1
2. Description of Canada's Forest Inventory 1
   - 2.1 General 1
   - 2.2 Data Sources and Inventory Types 2
   - 2.3 Attribute Data 5
   - 2.4 Age of Data 6
   - 2.5 Geographic Data 7
   - 2.6 Data Compilation 7
   - 2.7 Biomass Estimation 10
   - 2.8 Data Summaries and Display 12
3. Inventory Results 12
   - 3.1 Land Class 14
   - 3.2 Ownership 18
   - 3.3 Status 20
   - 3.4 Site Index 21
   - 3.5 Stocking 24
   - 3.6 Age and Maturity 26
   - 3.7 Forest type 30
   - 3.8 Predominant Genera 31
   - 3.9 Lead species 33
   - 3.10 Volume 34
   - 3.11 Biomass 38
   - 3.12 Access 41
4. Regional Summaries 43
   - 4.1 Forest Regions 43
   - 4.2 Terrestrial Ecozones of Canada 45
   - 4.3 Boreal Region 47
5 Featured Analysis: Protected Areas 50
6 Summary 53
7 References 54
8 Tables 55

Appendix I. Summary Tables 71
Appendix II. CanFI2001 Codes and Descriptions 113
Appendix III. Data Formats 126

Abstract

Canada's Forest Inventory is a compilation of the most recent information on the extent and state of Canada's forest resources. It is based on existing provincial and territorial forest inventories and satellite imagery, and is revised periodically to reflect the most recent data available. Canada's Forest Inventory 2001 (CanFI2001) is based on contributions from federal, provincial and territorial government agencies. It is stored in a relational database and geographic information system that provides statistical reporting, mapping and spatial-analysis capabilities. CanFI2001 replaces Canada's Forest Inventory 1991: The 1994 Version (CanFI1991).

The 2001 National Forest Inventory includes a revised land classification, an expanded species list, expanded coverage to include the entire land mass of Canada and an estimation of forest biomass.

This report represents a summary of data available.

Résumé

L'Inventaire des forêts du Canada est une compilation de l'information la plus récente sur l'étendue et l'état des ressources forestières du Canada. Il repose sur les inventaires des forêts provinciaux et territoriaux existants ainsi que sur les images satellites, et il est régulièrement révisé afin de présenter les données les plus récentes connues. L'Inventaire des forêts du Canada 2001 (IFCan2001) se fonde sur les contributions des agences gouvernementales fédérales, provinciales et territoriales. Il est stocké dans une base de données relationnelles et dans un système d'information géographique et il permet de produire des rapports statistiques, des cartes et des analyses spatiales. L'IFCan2001 remplace le Canada's Forest Inventory 1991: the 1994 Version (appelé IFCan1991).

L'Inventaire forestier national 2001 comprend une classification révisée de la couverture terrestre, une liste étendue des essences, une présentation plus élargie qui inclut la totalité de la masse terrestre du Canada, ainsi qu'une estimation de la biomasse forestière.

Ce rapport représente un résumé des données disponibles.

Contributors to the Inventory

Newfoundland and Labrador

Department of Forest Resources and Agri-foods

Nova Scotia

Department of Natural Resources

Prince Edward Island

Department of Agriculture, Fisheries, Aquaculture & Forestry

New Brunswick

Department of Natural Resources & Energy

Québec

Ministère des Ressources naturelles, de la Faune et des Parcs

Ontario

Ontario Ministry of Natural Resources

Manitoba

Manitoba Conservation, Forestry Branch

Saskatchewan

Saskatchewan Environment and Resource Management

Alberta

Sustainable Resource Development

British Columbia

Ministry of Forests

Yukon Territory – listed under Canada

Northwest Territory – listed under Canada

Nunavut Territory – listed under Canada

Canada

Canada Centre for Remote Sensing
Agriculture Canada - Prairie Farm Rehabilitation Administration
Indian and Northern Affairs Canada

Acknowledgements

The authors gratefully acknowledge provincial and territorial forest inventory staff for providing and, in some cases converting, data: Paul White (Newfoundland and Labrador), Colleen Brothers (Nova Scotia), Bill Glen (Prince Edward Island), Bob Dick and John Upshall (New Brunswick), Robin Lefrancois (Quebec), Frank Addante (Ontario), Gerry Becker (Manitoba), Xilin Fang (Saskatchewan), Ken Dutchak and Daryl McEwan (Alberta), Tim Salkeld (British Columbia), and Pat MacDonell and Jessie Devost (Yukon).

Joe Lowe's (1934–1996) vision for a National Forest Inventory for Canada was carried forward by Steen Magnussen; it was brought into being with the capable and invaluable data-conversion assistance of summer and co-op students Tom Arkinstall, Tamara Brierley, Becky Davis, Sean Fadum, Jacob Guercio, Luke Holden, Norman Sim, Mark Szilveszter, Kelly Wallace and Tracy Young. Stephen Gray's expertise in data extraction for analysis and understanding of the data also aided greatly in the preparation of a clean, error-free data set. He prepared data for map production and drafted data summaries for tables. Dennis Clarke prepared and assisted in the design of maps. Paul Boudewyn and Alex Song developed the biomass estimation, and Paul prepared the text describing biomass-estimation procedures and the resulting biomass data set. The authors gratefully acknowledge the time and effort that these and others contributed to the project—it would not have been possible without them.

Finally, the authors appreciate the comments of reviewers Brian Haddon, Ken Mallett, Hubert Bunce and Simon Bridge, and wish to thank them for their time and efforts.

Highlights

- Canada's forests contain just under 29.4 billion m^3 of merchantable wood volume.
- Canada has an estimated 29.6 billion tonnes of biomass, with 27.3 billion tonnes on forest land.
- Of Canada's total area (998 million ha) *
  - 40% is forest and other wooded land;
  - 31% is forest land.
- Of the forest and other wooded land (402 million ha), the ownership pattern is:
  - 78% provincial;
  - 14% federal (including the territories);
  - 8% private.
- Of the stocked forest area (275 million ha), the forest type distribution is:
  - 66% softwood;
  - 22% mixedwood;
  - 12% hardwood.
- Of the stocked forest volume (29.4 billion m^3), the species distribution is:
  - 77% coniferous;
  - 23% broad-leaved.
  - Spruce, pine, balsam fir and aspen/poplar are the major species.
- Of the stocked forest area, an estimated:
  - 31% is young;
  - 37% is mature or overmature;
  - 32% is uneven aged or unclassified for maturity.

* This figure is the official area of Canada (from Statistics Canada); the value from the CanFI2001 database is slightly less (979 million ha) due to the various data sources and their resolutions.

1. Introduction

Canada has national and international commitments to report on forest resource information to the State of Canada's Forests report to Parliament, the National Forestry Database Program's Compendium of Canadian Forestry Statistics, the United Nations Global Forest Resources Assessment, the Intergovernmental Panel on Climate Change, the Montreal Process's Criteria and Indicators of Sustainable Forest Development and others. In order to meet these commitments, a reliable central source for data is required. Canada's Forest Inventory provides these data in the form of tabular summaries, maps and extracted subsets of the data. Besides providing information to meet Canada's reporting commitments, the database provides data to other clients, such as government agencies, universities, non-governmental organizations, environmental non-governmental organizations and anyone interested in knowing more about Canada's forests.

Canada's Forest Inventory 2001 (CanFI2001) is a compilation of different data sources into a common format. Data sources include detailed, stand-level vegetation and forest resource inventories from the provinces, territories and other jurisdictions, ecological land classifications, and classified satellite imagery. The process for producing CanFI2001 was established for the production of the 1981 national forest inventory and carried through the 1986 and 1991/94 national forest inventories. The approach is cost effective in that it is based on existing data and requires no additional data collection, and the process is well established and accepted by the contributing agencies.

CanFI provides detailed information about Canada's forests consistent with forest management information. However, the resulting national picture of Canada's forests lacks information on the nature and rate of changes to the resource, does not reflect the current state of the forests, and cannot be used as a satisfactory base to monitor change. Nor can changes in the forest resource be derived from a comparison of successive national forest inventory reports.

This report describes the inventory, how it was created, and what it contains. It describes each attribute in the database, and provides inventory results in the form of tables, maps and graphics. Summaries for forest regions, for terrestrial ecozones and for the boreal region of Canada are presented. As a feature analysis, the inclusion of protected areas in CanFI2001 is discussed and some results are presented. Finally, comparison with earlier versions of the inventory and other issues are discussed. Detailed summary tables are included in Appendix I; the data codes and descriptions are in Appendix II; Appendix III contains the data formats of the CanFI2001 database.

2. Description of Canada's Forest Inventory

2.1 General

Management of most of Canada's forest lands is a provincial responsibility. Forest management requires basic information about the location and extent of the forest resource. A forest inventory can provide this information. A forest inventory may be described as a survey of an area to determine the current location, extent, condition, composition, structure and volume of the forest resource. Provinces use different forest inventory systems for different forest management needs; for example, extensive reconnaissance-level inventories for exploratory purposes and strategic-level information, or operational inventories—detailed inventories of a specific area—for operational harvest planning.

The management inventory is the most prevalent and important kind of inventory used, because it provides data for longer-term forest management planning and decision making. The forest management inventory is a detailed and complete inventory of a management unit and includes complete-coverage forest-stand maps, based on interpreted aerial photography, and volume estimates, based on field sampling. Forest management inventories describe the volume, location and condition of the resource at a specific point in time. They are usually conducted in 10- to 20-year cycles. Often, by the time a new cycle begins,

standards, definitions and measurement protocols have changed. Provincial forest management inventory databases typically contain information from several inventory cycles.

Federal government responsibilities relating to forest inventory lie in the areas of research and development, the inventory of federally administered forest lands, and in the compilation and reporting of a national forest inventory. The current national inventory, Canada's Forest Inventory 2001 (CanFI2001), is a compilation of stand-level provincial data from forest management inventories. CanFI2001 is derived from a number of sources, including management, regional, and reconnaissance-level inventories, satellite imagery, and other surveys (e.g., ecological land classification of national parks). The latter two types of sources were used for areas where provincial forest management inventory data were not available.

In order for source data to be combined into CanFI2001, a national database format and coding scheme were developed. Protocols to convert each source dataset to CanFI2001 specifications were developed in cooperation with each data provider. These data are the attribute data in CanFI2001, which describes the land cover in each inventory summary unit using 16 classifiers and numerical attributes of area and wood volume.

Although the basic geographic summary unit of forest management inventories is the forest stand, forest-stand boundaries are not retained in CanFI2001. The basic geographic summary unit in CanFI2001 is the inventory summary unit (Figure 1), generally equivalent to a forest management inventory map sheet. Table 1 shows the range of areas of maps that are not along a coast or border, as used in CanFI2001. After each stand has been coded according to the national classifiers, similar stands are aggregated (i.e., the area and volume are summed). The number of records for each summary unit varies depending on the data source and the complexity of the land cover classes.

Besides storing attribute data in a relational database, CanFI2001 also stores the geographic data in a geographic information system (GIS) that contains summary-unit location information for mapping purposes. The GIS also allows summary units to be combined with other geographic data, such as forest regions, ecozones and road networks, for geographic analyses of attribute data.

2.2 Data Sources and Inventory Types

Data from 48 different sources from the 13 provinces and territories—totalling 58 inventory phases—make up CanFI2001. The inventory sources used in the creation of CanFI2001 (listed in Appendix I: Table I-1) can be grouped into five categories, ranked here from the newest and most detailed to inventories carried out for other purposes:

1. New forest or vegetation resource inventory (management inventory);
2. Older forest or vegetation inventory data resubmitted to CanFI (management inventory);
3. Data re-used from earlier version of CanFI (reconnaissance, regional or management);
4. Satellite imagery;
5. Other surveys.

Table 2, a summary of Appendix I: Table I-1, shows that, in CanFI2001, data for more than half the area of Canada are from satellite imagery, and more than a quarter are from new or newly submitted provincial and territorial inventories. About 12% of the data is re-used from CanFI1991, about 4% from old provincial or territorial datasets resubmitted and recoded to CanFI2001, and the remaining data originate from ecological studies of national parks or other studies, or were added by the Canadian Forest Service.

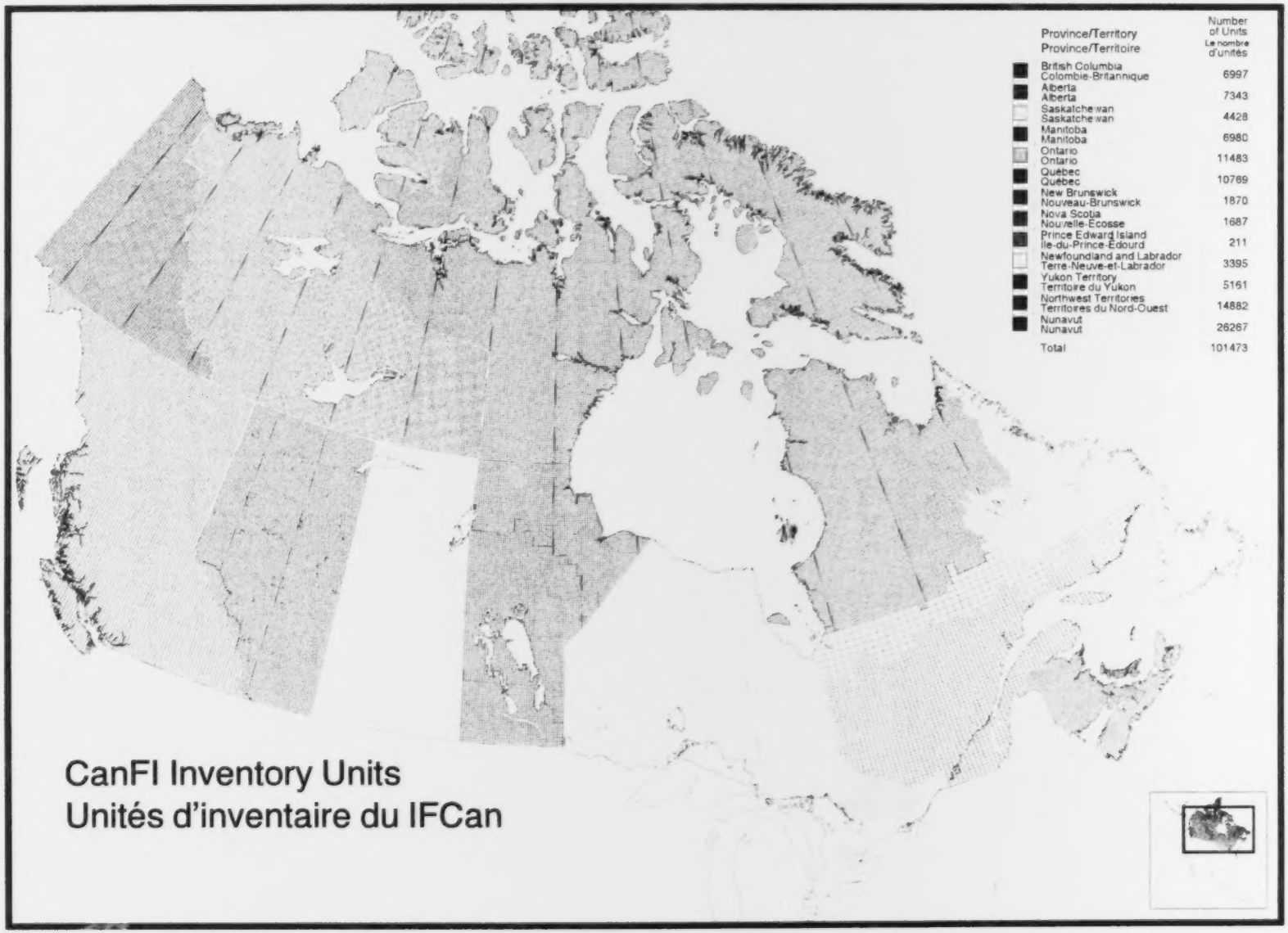


Figure 1. CanFI mapping units

New forest or vegetation resource inventory

These are data from detailed, intensive forest or vegetation inventories in which the forest types are usually mapped in detail with estimates given for each type (Haddon 1988). These inventories are compiled for management purposes to determine data such as area, condition, volume and species, and are usually created using information from aerial remote sensing platforms in combination with information from ground samples. In CanFI2001, these are either new inventories or inventories which have been developed with the use of models.

Older forest or vegetation inventory data resubmitted

These data are similar to, but older than, the data within new forest or vegetation resource inventories. These older inventory data were used in previous versions of CanFI, having been converted to the CanFI classifiers current at that time, but have since been converted to CanFI2001 classifiers and resubmitted. As land-cover classifiers are more detailed in CanFI2001, this allows capture of more detail from the source inventory than was stored in earlier versions of CanFI.

Data re-used from earlier versions of CanFI

These forest inventory data were re-used directly from earlier versions of CanFI: the source data were not re-converted to CanFI2001 classifiers.

Satellite imagery

This consists of data collected from space-based sensors. The resolution of the data as used in CanFI2001 varies with the sensor, from 30-m (Landsat data) to 1-km (SPOT-VGT and AVHRR data) resolution. The type of information collected is more generalized than that collected for management purposes, and does not include condition, species, or volume estimates.

These include SPOT–VGT (Systèm pour l'Observation de la Terre–VEGETATION), AVHRR (Advanced Very High Resolution Radiometry), Landsat data in Ontario, South Digital Land Cover data in Saskatchewan, Alberta Ground Cover Classification, Prairie Farm Rehabilitation Administration generalized landcover, as well as data for Wood Buffalo National Park. In Figure 2, these areas are represented as more recent datasets (up to 10 years old).

Other surveys

These include ecological land classifications of national parks (Gwaii Hanaas and Kouchibouguac national parks), the Native Prairie Vegetation Inventory in Alberta, and records added by the Canadian Forest Service (for the Great Lakes, Smallwood Reservoir, and other areas for which data were missing).

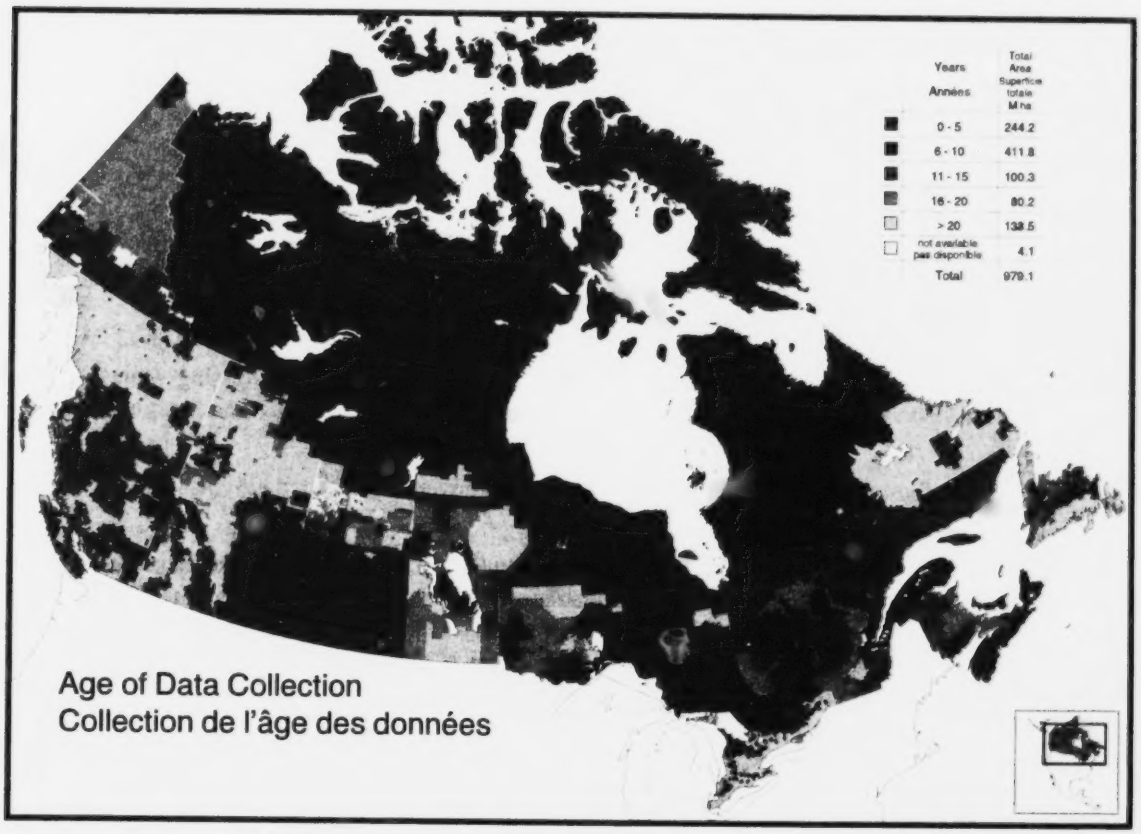


Figure 2. Age of data collection

2.3 Attribute Data

Attributes in CanFI2001 include area, volume, and biomass, according to 16 classifier classes for each summary unit.

The 16 classifiers are as follows:

1. Data source: a description of inventory type;
2. Ownership: land-ownership classes;
3. Status: control of land for timber harvesting;
4. Protection: land protection from human disturbance;
5. Land class: land cover description (increased from seven classes in CanFI1991 to 62 classes);
6. Site quality: land capability to grow trees;
7. Stocking class: density of trees on forested land;
8. Age class: age of forested stands (20-year classes) at the year of information collection;
9. Maturity class: maturity of forest stands for timber harvesting—a qualitative assessment;

10. Forest type: description of majority of trees in a stand as softwood, mixedwood or hardwood;
11. Predominant genus: most abundant tree genus in a stand;
12. First species: tree species listed first in stand composition;
13. Year of data collection: year in which data were obtained—usually the year of photography or satellite imagery;
14. Year of update: year during which photos or imagery were updated (for fires, harvesting, etc.) or during which growth in volume and change in some classifiers (e.g., age and maturity class) were modelled (British Columbia);
15. Volume type: a key to one of three ways in which volume data of zeros or missing-values codes have been replaced by average volumes for the same province, region and maturity class;
16. Inventory phase: a key to identify different sources of inventory within a province or territory.

Area is described in hectares. Volume is gross merchantable volume (volume of the main stem, excluding stump and top, but including defective and decayed wood) in all provinces and territories, except British Columbia, where it is net merchantable volume (defective and decayed wood is excluded). Volume data, as of the year of data collection or update, for up to 28 different species in a province or territory are stored as measurements in cubic metres per hectare, and are summarized as cubic metres for coniferous species, broadleaved species, and all species combined. The utilization specifications for volumes—that is, the tree-size limits below which trees are not considered in volume calculations—are listed in Appendix II. Biomass is measured in metric tonnes per hectare of above-ground, oven-dry biomass. Biomass-estimation procedures are described in Section 2.7.

2.4 Age of Data

More than 85% of the area of Canada is represented by data collected during the last 20 years; more than two-thirds (66.7%) of the data were collected between 1995 and 2003 (Figure 3). In CanFI2001, 14.4% of data was collected 30 or more years ago. Appendix I: Table I-1 lists year of data collection by inventory source; Figure 2 shows the distribution of data-collection age across Canada.

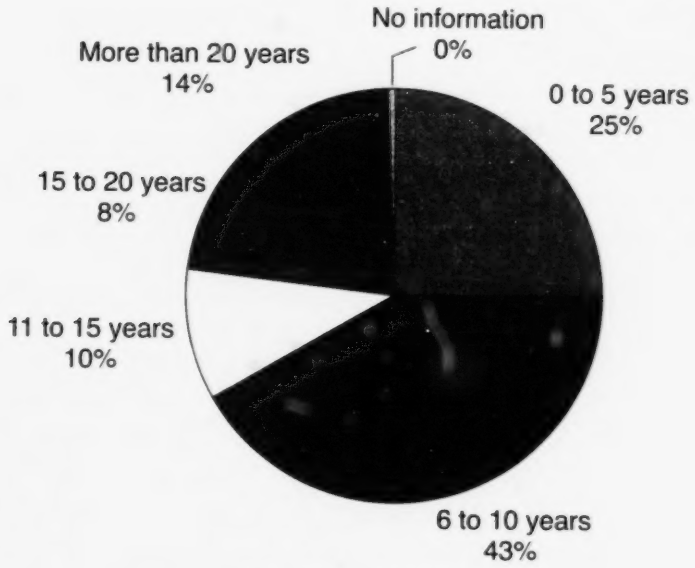


Figure 3. Age of data in CanFI2001

2.5 Geographic Data

The GIS stores boundaries of CanFI summary units according to each province and territory, as well as geographic data representing forest regions and forest sections (Rowe, 1972), terrestrial ecozones and ecoregions as defined by the Ecological Stratification Working Group (1995), the Canadian Road Network (from DigiMap Data Services, Inc., 1996, Toronto, Canada), and provincial and territorial boundaries, coastlines and lakes.

CanFI2001 contains 102 120 summary units. These vary, depending on data source, from 2 800 ha to 90 000 ha in size (Figure 1; Appendix I: Table I-2). The average summary unit area measures about 9 600 ha, or about 10 km by 10 km.

2.6 Data Compilation

Procedures for data compilation were as follows:

1. Attribute and GIS data were received from the data originators;
2. Protocols were developed to convert each source dataset to the national data format;
3. Converted data were checked for quality;
4. Converted data were checked against GIS coverage to ensure there were data for each mapping unit, and that GIS coverage was complete;
5. Errors were reported to the data originator;
6. Corrections were applied to the converted data, or revised source data were provided;
7. Once all data sets were correct, summary tables were created for signed approval by the data originators;
8. Final tables were created.

Figure 4 illustrates how stand-level data were aggregated to fewer and standardized records, including the change in scale from about 1:20 000 to 1:20 000 000. Original stand-level data usually has one record per stand. When each stand was classified to CanFI2001 specifications, many stands within a summary unit were similarly classified. These similar stands have been aggregated within summary units (their areas and volumes are summed) so that, at the summary-unit level, there is only one record for each grouping of stands with the same CanFI2001 attributes. Stand boundaries have not been retained in the CanFI2001 GIS coverage: the summary unit is the smallest geographic unit.

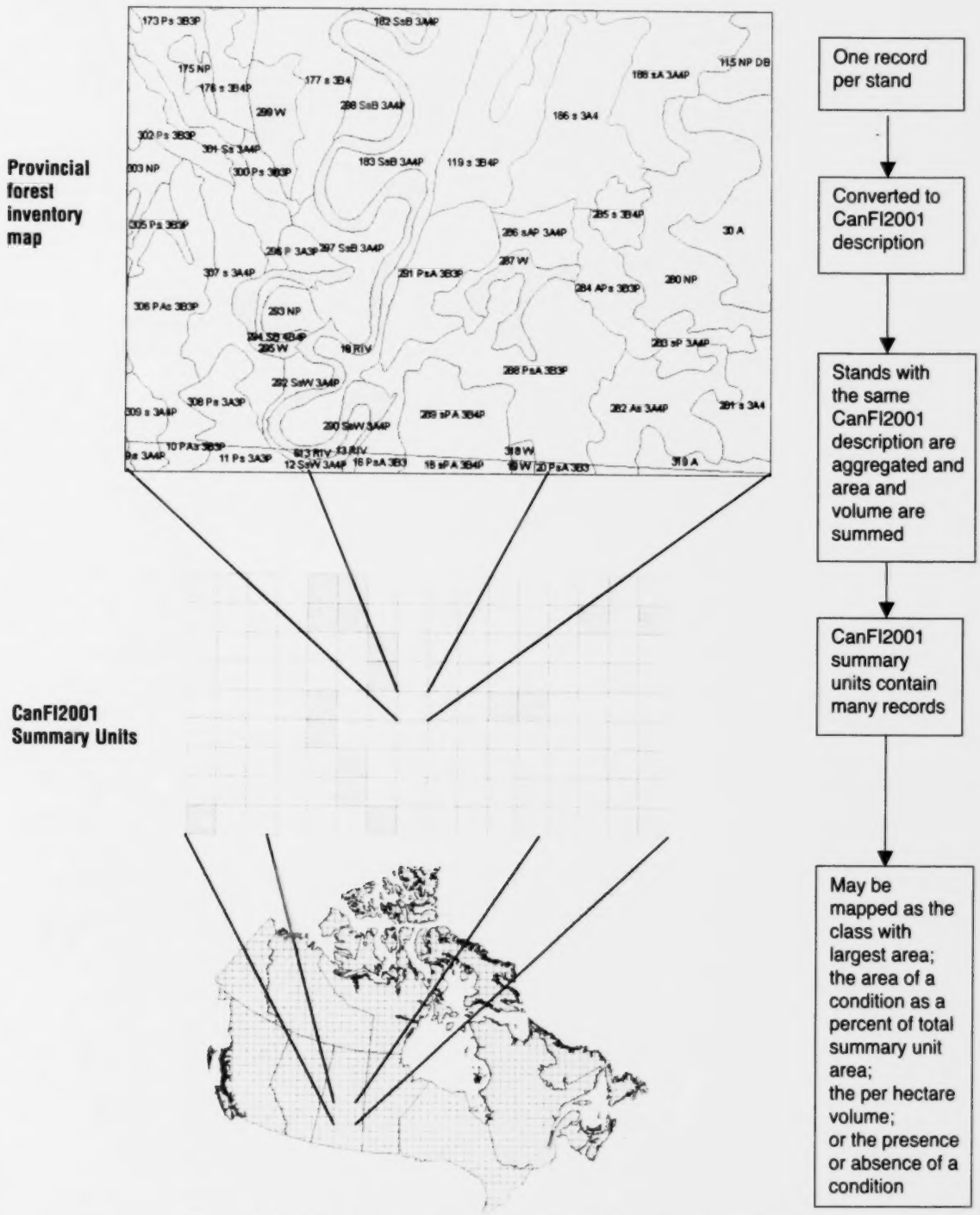

Provincial forest inventory map
CanFI2001 Summary Units
One record per stand
Converted to CanFI2001 description
Stands with the same CanFI2001 description are aggregated and area and volume are summed
CanFI2001 summary units contain many records
May be mapped as the class with largest area;
the area of a condition as a percent of total summary unit area;
the per hectare volume;
or the presence or absence of a condition

Figure 4. Stand-level data are reduced to fewer and standardized records

2.7 Biomass Estimation

Biomass by component (stem wood, stem bark, branches, foliage) has been predicted for every vegetated record in the CanFI2001 database. The methods used to estimate biomass reflect inherent characteristics of the database and availability of ground plot data. They were guided by an overall objective to derive empirical models that would logically convert volume to biomass where volume exists, or to relate biomass to land cover where volume does not exist. These methods can be grouped into four scenarios (Boudewyn, P.; Song, A.; and Gillis, M. Biomass estimation for vegetated areas of Canada. Natural Resources Canada, Canadian Forest Service, Victoria, B.C. Report in preparation.):

Scenario 1: gross merchantable volume exists (treed, merchantable stands). Figure 5 summarizes the methods used to estimate biomass by component for CanFI2001 records that contain volume.

Scenario 2: gross merchantable volume is missing, but should exist. Volume is first estimated from look-up tables that contain average volume per hectare by various combinations of classifiers represented in CanFI2001. The methods of Scenario 1 are then applied.

Scenario 3: vegetated treed land classes where gross merchantable volume is zero (treed, non-merchantable stands). Permanent sample plots and temporary sample plots that meet these criteria, along with published reports, were used to construct look-up tables of average biomass per hectare for various components by combinations of classifiers (ecozone and predominant genus).

Scenario 4: vegetated, non-treed records (e.g., grasslands, shrubs, muskeg). A database of published information on biomass of these areas was created and used to develop look-up tables of average biomass per hectare by combinations of land classes and ecozones.

Substitution guidelines were developed and implemented for combinations of classifiers that do not have models or look-up tables due to gaps in the permanent or temporary sample plot development and publication databases. Biomass is now summarized similarly to volume, and many of the tables shown throughout the report include sections for biomass, or separate biomass tables.

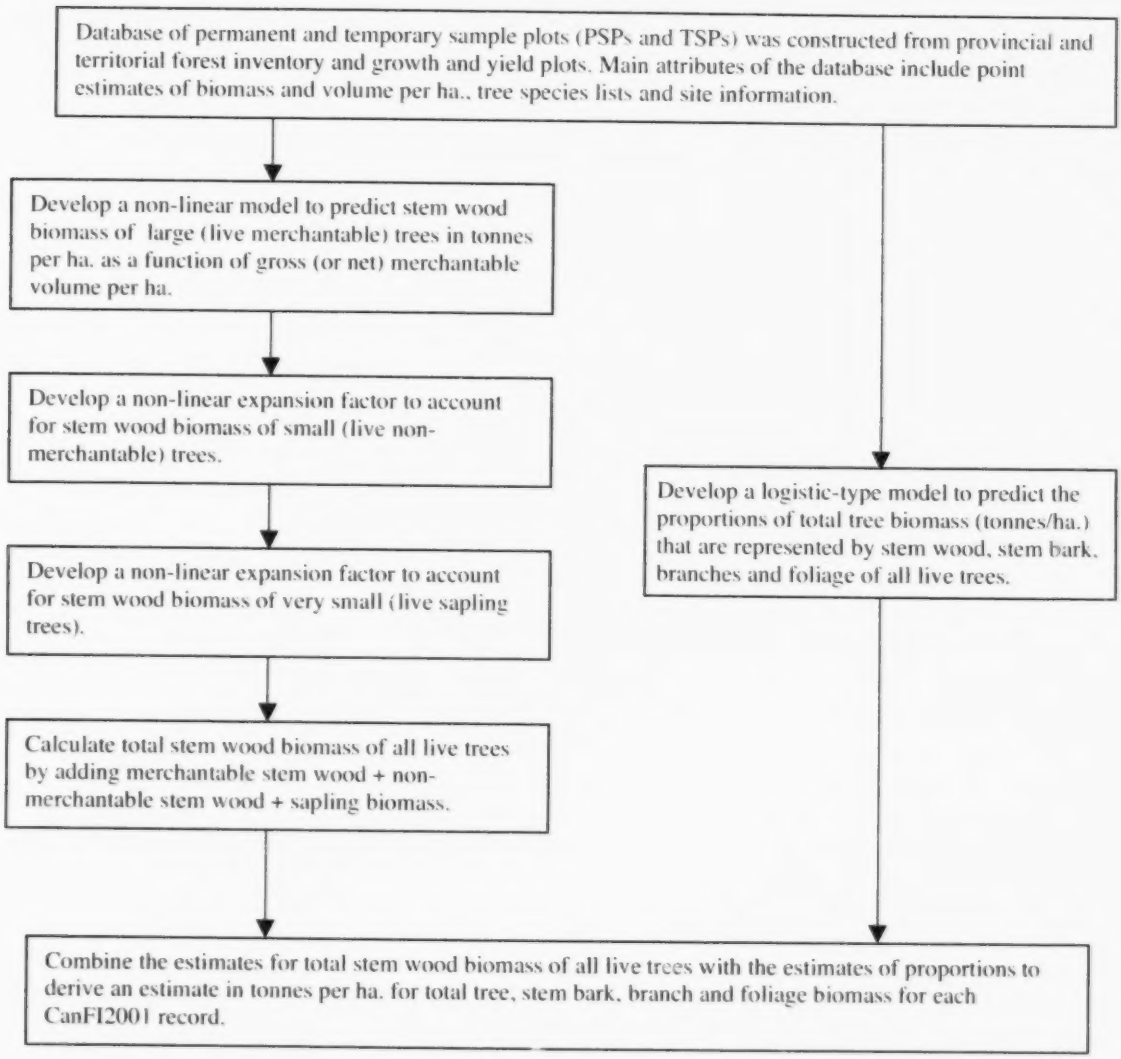

Database of permanent and temporary sample plots (PSPs and TSPs) was constructed from provincial and territorial forest inventory and growth and yield plots. Main attributes of the database include point estimates of biomass and volume per ha., tree species lists and site information.
Develop a non-linear model to predict stem wood biomass of large (live merchantable) trees in tonnes per ha. as a function of gross (or net) merchantable volume per ha.
Develop a non-linear expansion factor to account for stem wood biomass of small (live non-merchantable) trees.
Develop a non-linear expansion factor to account for stem wood biomass of very small (live sapling trees).
Calculate total stem wood biomass of all live trees by adding merchantable stem wood + non-merchantable stem wood + sapling biomass.
Develop a logistic-type model to predict the proportions of total tree biomass (tonnes/ha.) that are represented by stem wood, stem bark, branches and foliage of all live trees.
Combine the estimates for total stem wood biomass of all live trees with the estimates of proportions to derive an estimate in tonnes per ha. for total tree, stem bark, branch and foliage biomass for each CanFI2001 record.

Figure 5. Generalized model development process.

2.8 Data Summaries and Display

Data in the CanFI2001 database can be summarized and displayed as tables and maps, or portions may be exported as text files for analysis by the client.

Tabular summaries can be created for the entire country, or for each province, forest region, ecozone or any other region that has been intersected with the summary unit coverage in the GIS. The attributes in the tables can be area, volume or biomass, expressed as units or percent, and can be presented in two- and three-way formats by various classifiers.

Mapping of data from CanFI2001 is based on a single value for each mapping unit. A mapping unit may be, for example, an inventory summary unit, an ecozone or a province. The data can be summarized in a number of ways to provide a value for a mapping unit: the condition with the most area in a mapping unit; the area of a condition as a percent of the total area of a mapping unit; the per-hectare volume or biomass; of a condition; or the presence (or absence) of a condition.

Clients such as the National Forest Carbon Monitoring and Reporting System, which models Canada's forests' carbon budgets, often require a subset of the CanFI data to do their work. Such subsets may be produced and displayed for a defined area (e.g., a group of ecozones), or for a selected set of classifiers.

3. Inventory Results

CanFI2001 is the first national forest inventory to cover the entire land mass of Canada. According to CanFI2001, the total area of land and fresh water in Canada is 979.1 million ha. This value varies by less than 2% from the value of 998.5 million ha reported by Statistics Canada (2005). The difference is due to the differing spatial resolutions of the data sources used.

Forest and other wooded land covers 402.1 million ha, representing 41% of the country, whereas the portion that is forest (310.1 million ha) makes up about 32% of Canada's area (Table 3). Figure 6 shows relative total area and forest and other wooded land by province. Nunavut has the largest total area, but only 0.8 million ha—the smallest area—of forest and other wooded land. Quebec and Ontario have more forest and other wooded land than British Columbia does, but the percentage of forest and other wooded land compared to the total provincial area is highest in British Columbia, at almost 68%, compared to 63% for Ontario and 56% for Quebec.

Of the total 29 383 million m^3 in wood volume, 77% is coniferous and 23% is broadleaved (Table 4). Figure 7 shows that the trees growing in British Columbia are very large: they make up 36% of the forest volume in Canada, despite growing on only 19% of Canada's forest area. Almost 94% of British Columbia's wood volume is coniferous. Ontario and Quebec have the next highest total volumes, along with the highest percentage of broadleaved volume, at 37% and 31% respectively.

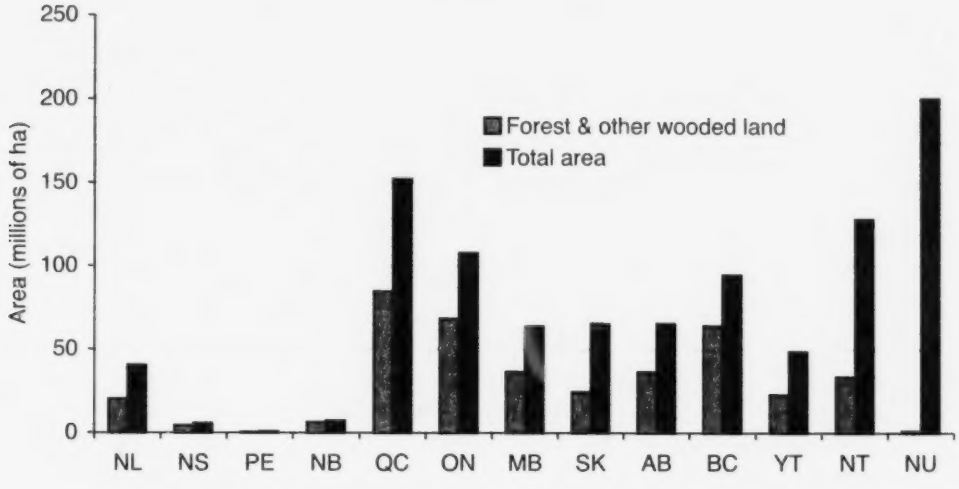


Figure 6. Total area and forest and other wooded land area by province/territory

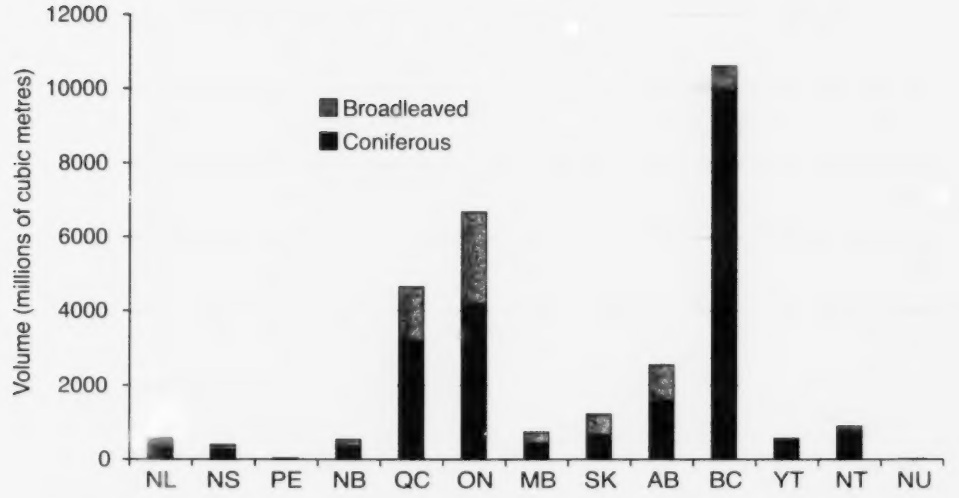


Figure 7. Total volume by coniferous and broadleaved classes, and by province/territory.

3.1 Land Class

Land class is a description of land cover, as recorded in source inventories from various observation platforms. Since the 1991 inventory was completed, CanFI2001 has expanded the number of land classes from 7 to 62. This expansion reflects a cultural change from wanting to know how much timber is available to a need for more all-encompassing knowledge of the land and what is on it.

Figure 8 shows distribution of land classes across Canada. In the farming regions of southern Ontario, the prairies, and Alberta's Peace River region, the dominant land class is agriculture. The main forested area of Canada—shown by the dark green band—extends from Newfoundland through to the western Northwest Territories. The high mountainous regions of British Columbia and the Yukon are naturally non-vegetated. Northwest Territories, Nunavut and the northern regions of Labrador, Quebec, Ontario and Manitoba are classed as vegetated non-treed. For the few areas for which information is missing, the data sources were unable to determine land cover: for example, if land was obscured by cloud, the classification of satellite imagery would not have been able to distinguish a land class.

Figure 9 shows percentage of vegetated land for each CanFI2001 mapping unit. Only about 13% of the country is less than 20% vegetated. Most of these areas occur in Canada's far north, in the mountains of British Columbia and the Yukon, in northern Saskatchewan and Manitoba, and into the Northwest Territories and Nunavut.

The extent and amount of forest and other wooded land are shown in Figure 10. Forest and other wooded land do not occur in Canada's north (Nunavut, Northwest Territories, and northern Quebec and Labrador) nor in the agricultural areas of the prairie provinces and southern Ontario. Figure 11 shows the extent and amount of forest land.

Figure 8. Distribution of land classes in Canada

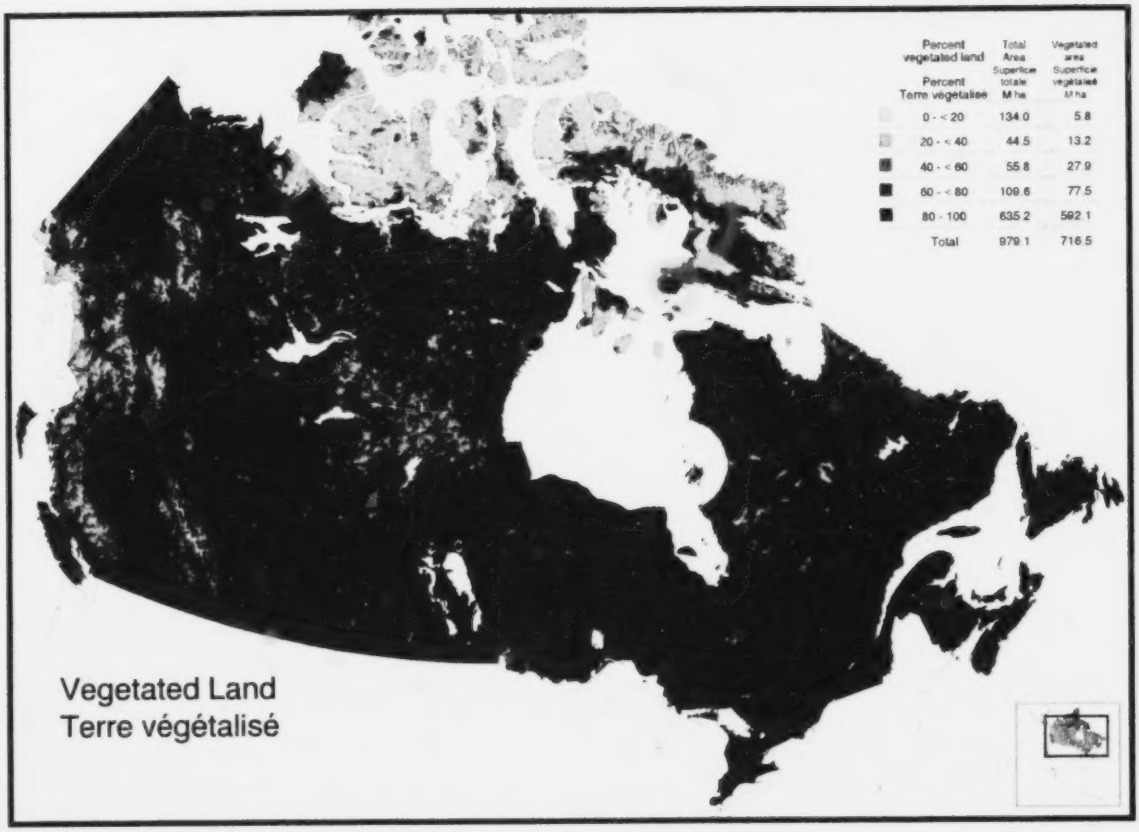


Figure 9. Vegetated land.

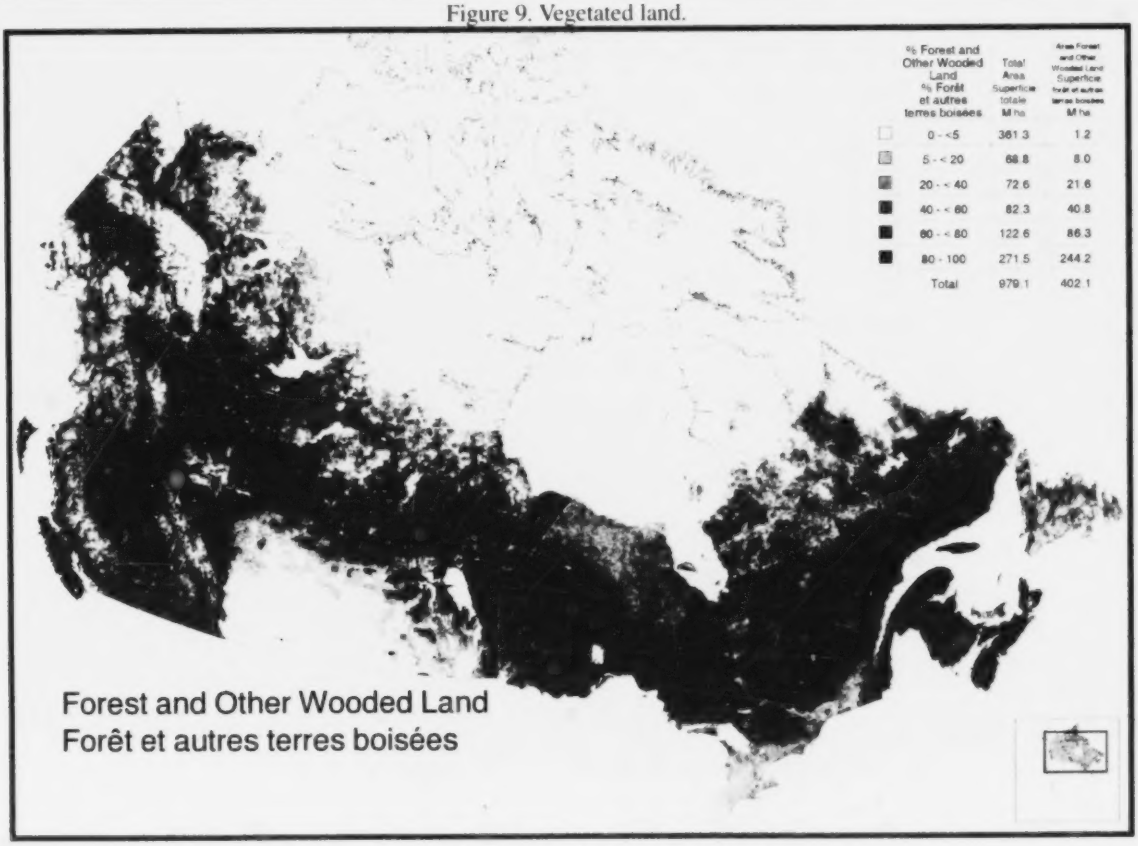


Figure 10. Forest and other wooded land

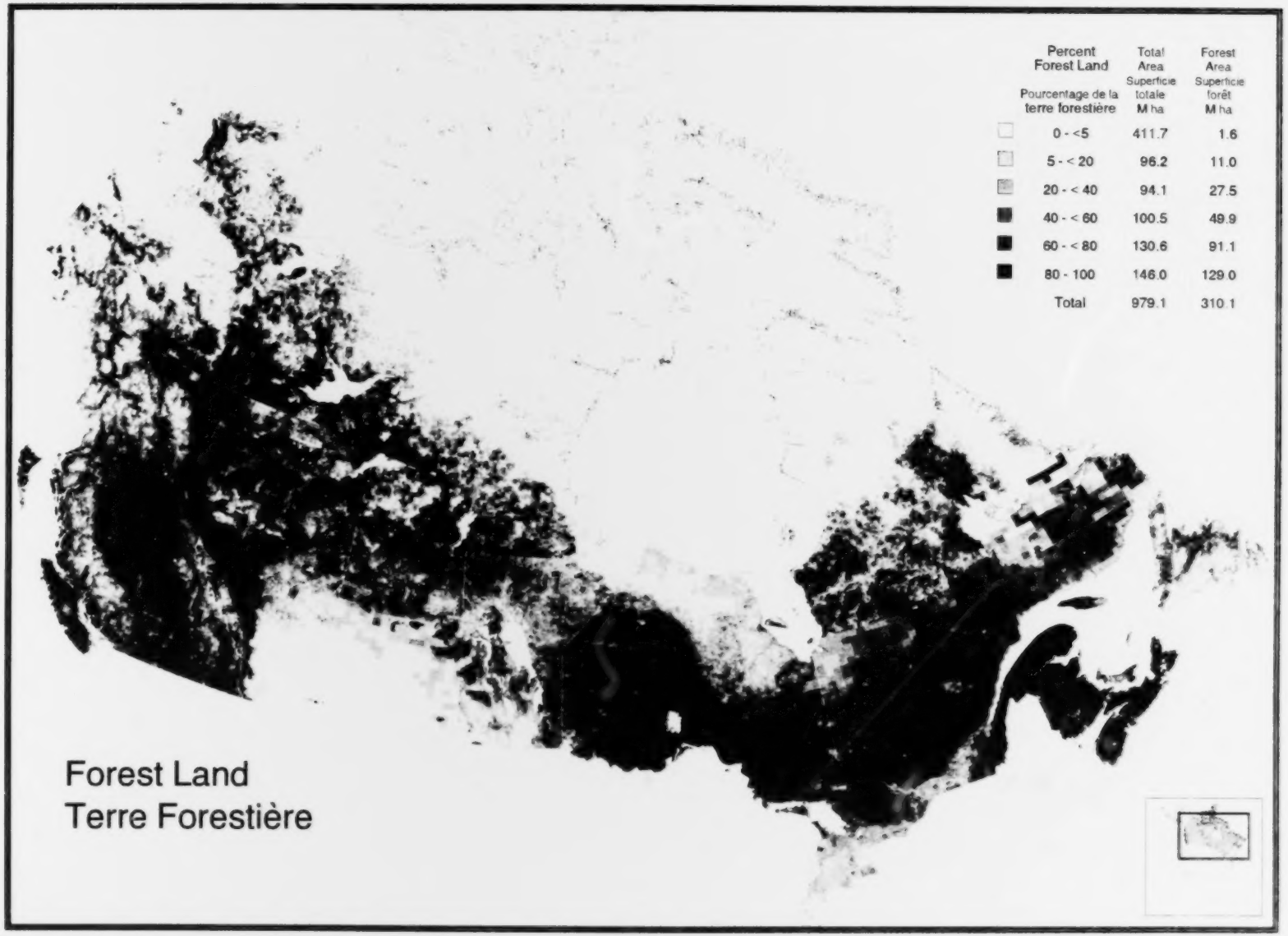

Percent Forest Land
Pourcentage de la terre forestière
Total Area Superficie totale M ha
Forest Area Superficie forêt M ha
0 - <5 411.7 1.6
5 - < 20 96.2 11.0
20 - < 40 94.1 27.5
40 - < 60 100.5 49.9
60 - < 80 130.6 91.1
80 - 100 146.0 129.0
Total 979.1 310.1
Forest Land
Terre Forestière

Figure 11. Forest land

Table 5 lists the area for each of the non-vegetated land classes (defined in Appendix II) occurring in CanFI2001. Table 6 lists the area, total volume and biomass for the vegetated land classes. Table 7 summarizes area by land-class groups and province and territory. Forest land covers most of Canada, with naturally vegetated non-treed land cover being the second most abundant land classification. Fresh water features cover 9% of Canada. Less than 1% of the country lacks information regarding land cover, mostly because the data sources for these areas included satellite imagery with land-obscuring cloud.

3.2 Ownership

The owner of a forest is responsible for its management. In CanFI2001, ownership of all lands is divided into federal crown land (including national parks, Department of National Defence land and the three territories), provincial crown land, First Nations land (Indian reserves), municipal lands, and private land. The private land has been classified, where information was provided, into industrial land (owned by a large corporate industry for commercial forestry purposes) and non-industrial land (owned by corporations or individuals that may or may not be used for commercial forestry purposes).

For all of Canada, about 91% of the total area is owned by the Crown (including First Nations land), with the rest being private (Figure 12). Large forest industry companies own 5% of privately owned land in Canada; the majority of private land (62%) is owned by nonindustrial owners, and the rest (33%) is owned with no indication of whether the owners are industrial or nonindustrial.

Area of forest and other wooded land is listed by ownership category in Table 8. Figure 13 shows the relative percent of ownership class for each province and territory. Prince Edward Island, Nova Scotia and New Brunswick have more private land than crown land; this situation is reversed in the other provinces. All forest and other wooded land in the territories is owned by the federal Crown. Across Canada, forest and other wooded land is about 93% publicly owned. This contrasts with the situation in the United States and many western European countries, where most forest and other wooded land is privately owned (United States, 58%; Austria, 80%; France, 76%; Norway, 83%; FAO 2006). Ownership of forest land by province and territory is listed in Appendix I: Table I-3.

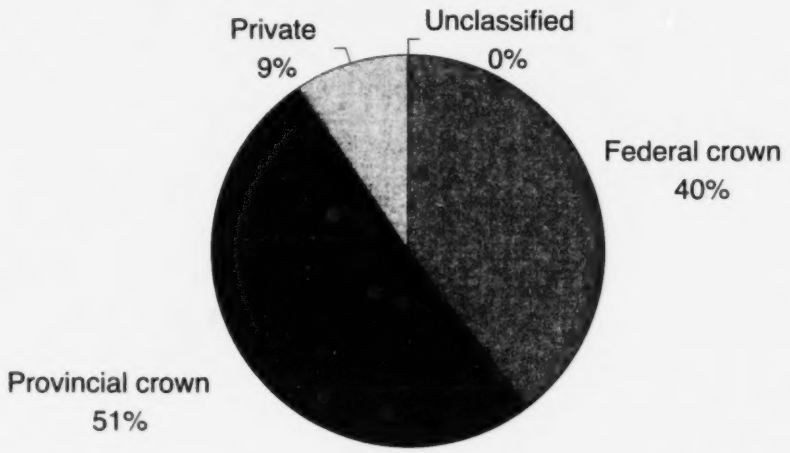


Figure 12. Total area by ownership class.

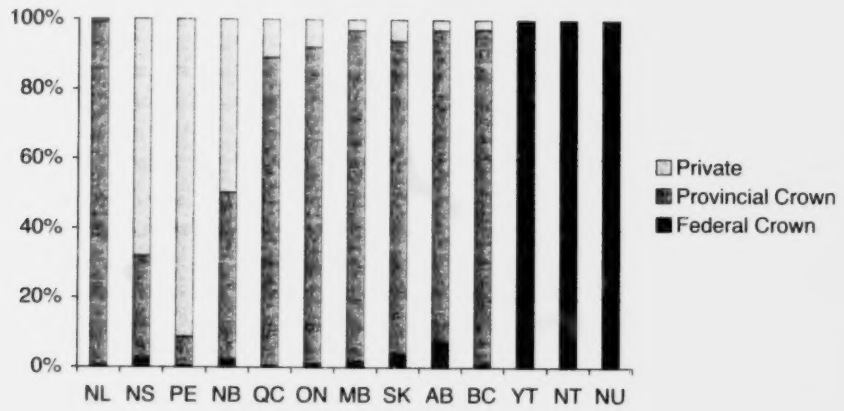


Figure 13. Percentage of ownership class of forest and other wooded land by province and territory

3.3 Status

Status refers to the status of land with respect to timber harvesting. Land may be reserved from timber harvesting by law (e.g., within a national park), management of the land may be retained by the owner (e.g., harvest allocation through quota or licences), or it may be delegated to another agency (assigned; e.g., via forest management agreements).

Table 9 lists the area of forest and other wooded land by status and province and territory; Table 10 lists the area of forest by the same classes. Five percent of the area of forest and other wooded land in Canada is reserved from forest harvesting (Figure 14). Figure 15 shows that the percentage of reserved forest land in Alberta is highest among the provinces and territories at about 12%, whereas Prince Edward Island has the lowest percent of reserved forest land (other than Nunavut)—this is mainly because it has such a high proportion of private forest (Appendix I: Table I-3).

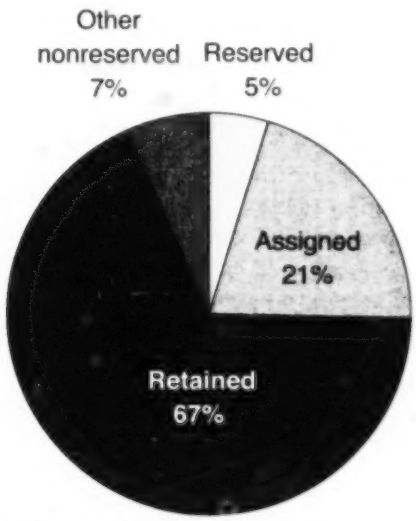


Figure 14. Area of forest and other wooded land by status class in Canada.

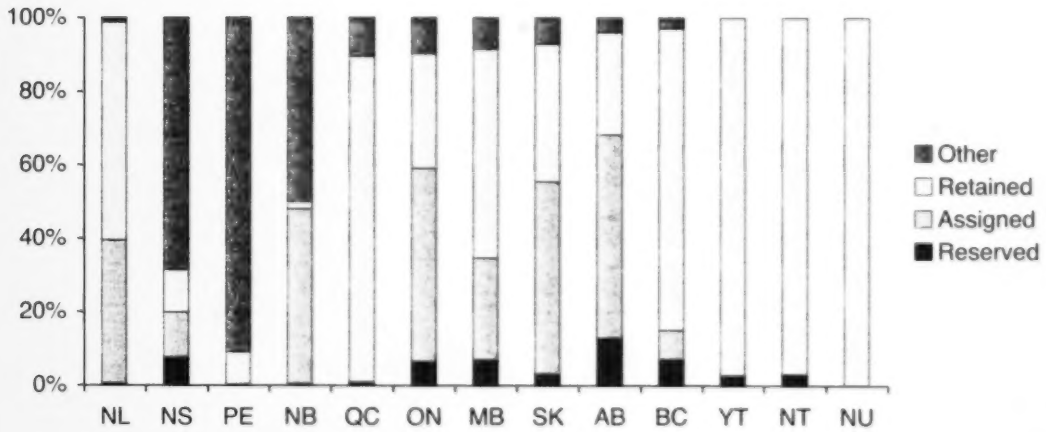


Figure 15. Relative proportion of forest land by status class in each province and territory.

3.4 Site Index

The ability of a particular location to grow trees depends on many factors, including soil nutrients and texture, drainage and climate. Because soil and climate factors are not easily measured or estimated from aerial photography, whereas tree height and age are, forest inventories use tree height at a certain age to predict future performance. CanFI2001 uses an index age of 50 years (100 years in the Yukon).

Site index is not available for all data sources in CanFI2001; of the 310 million ha of forest land in Canada, 38% (just under 120 million ha) has no site index information. Where information is available, Canada's forests have an average site index of 11.8 m at age 50 (Table 11; Appendix I: Table I-4). Volume per hectare and biomass per hectare tend to increase as site quality increases (Figure 16; Appendix I: tables I-5 and I-6).

The forests with higher site indices (27.5 m or taller at 50 years) are not extensive, they amount to about 1 142 000 ha (Figure 17; Table 11). The higher site-index forests contain 369.5 million m^3 of 29 383 million m^3, or 1.3% of the total volume (Table 11; Figure 18). Similarly, just 1.6% of the biomass is found in forests of higher site indices. Appendix I: tables I-7 and I-8 show total volume and biomass by site index and province and territory.

Figure 19 shows the predominant site index, based on the site index with the greatest area within a mapping unit. The highest site indices are found on the west coast, and a few higher site index areas exist in Ontario and New Brunswick. Most forests in Canada reach between 5.0 m and 19.9 m at 50 years.

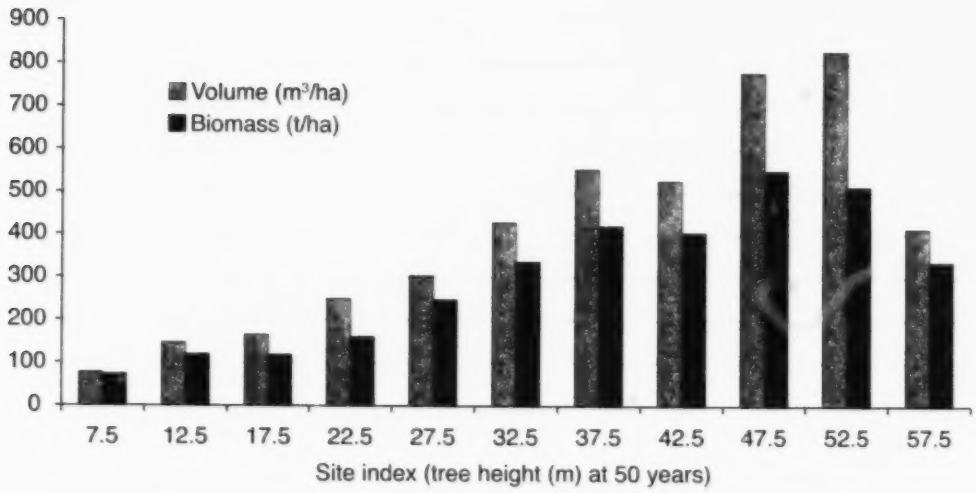


Figure 16. Average volume and average biomass by site index class.

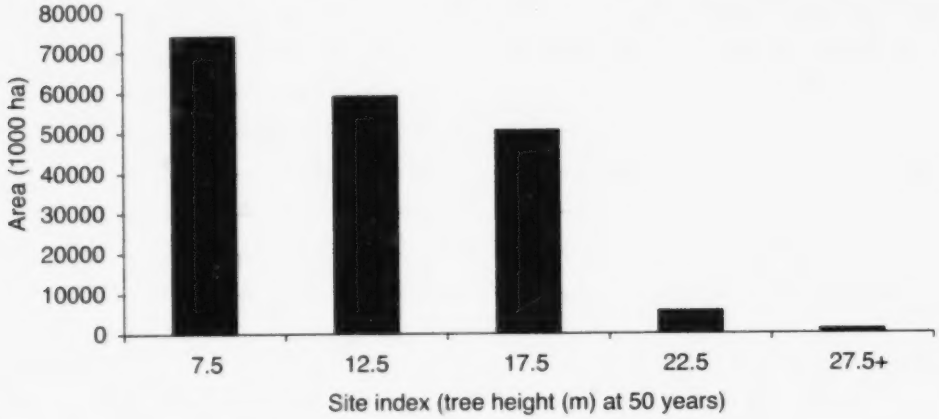


Figure 17. Area of forest land by site index class.

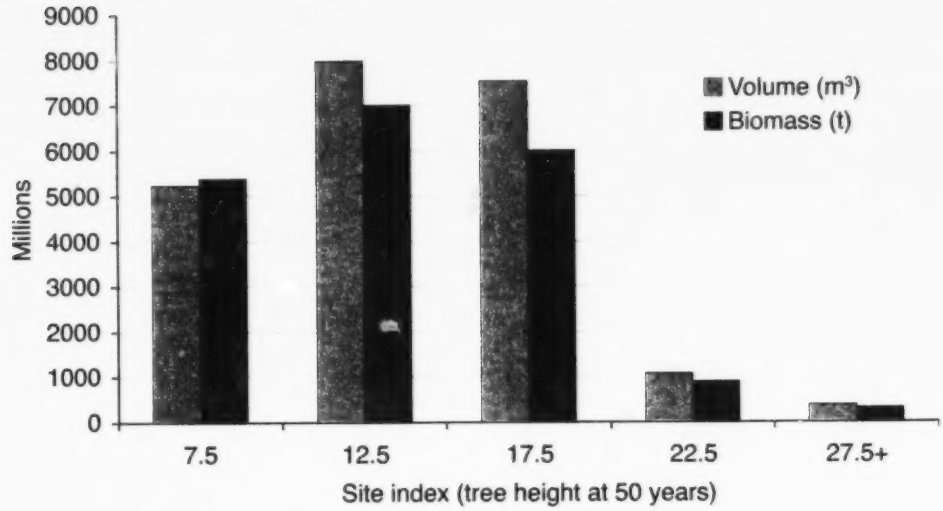


Figure 18. Total volume and total biomass by site index class.

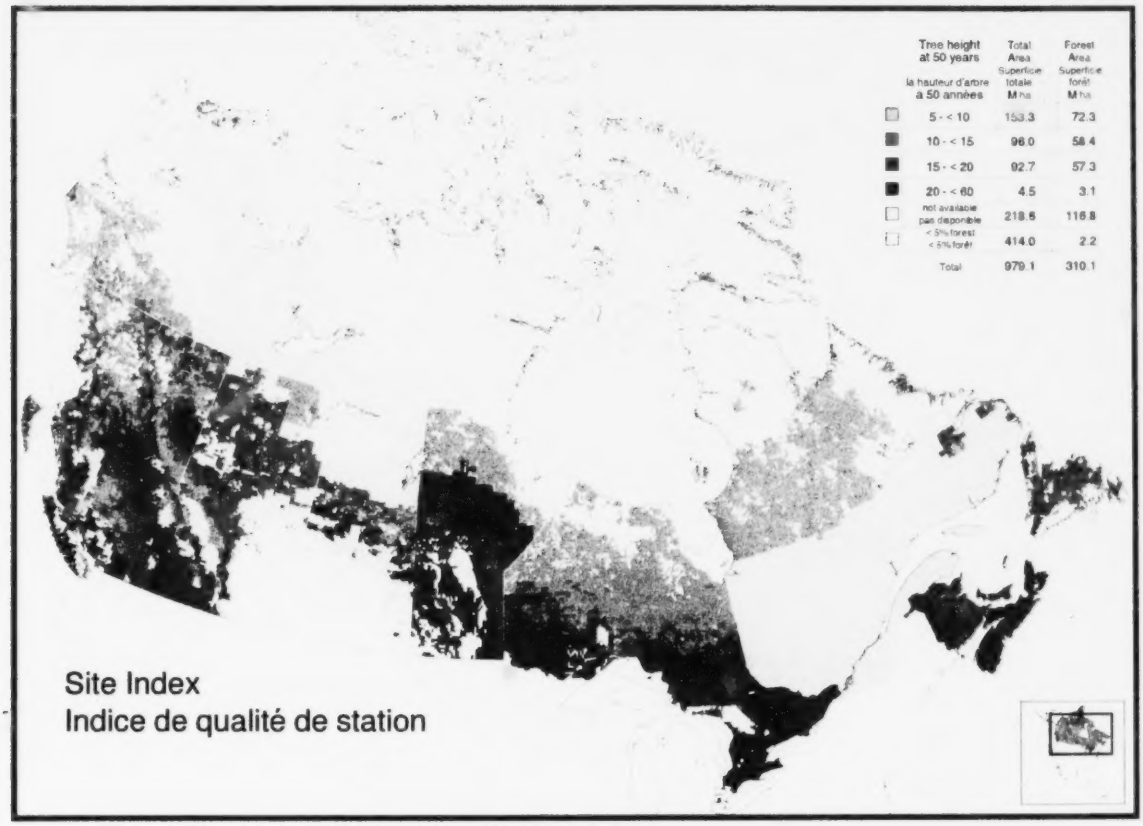

Tree height at 50 years
la hauteur d'arbre à 50 années
Total Area Superficie totale M ha
Forest Area Superficie forêt M ha
5 - < 10 153.3 72.3
10 - < 15 96.0 58.4
15 - < 20 92.7 57.3
20 - < 60 4.5 3.1
not available pas disponible 218.6 116.8
< 5% forest < 5% forêt 414.0 2.2
Total 979.1 310.1
Site Index
Indice de qualité de station

Figure 19. Site Index

3.5 Stocking

Stocking describes the density of forest stands. Nonstocked (2% of Canada's forest land) refers to forest land known to have few trees, or where the density is below the threshold that defines stocked. The stocking unknown class (10% of forest land) refers to areas recently subject to forest disturbances such as fire, harvesting, windthrow, insect or disease damage, or may be abandoned farmland: the effects of the disturbance on the area's stocking status are yet undetermined. The remainder of forest land (88%) is classified as stocked (Figure 20).

Stocked forest (274.9 million ha) is further defined as regenerating (1%), partially stocked (37%), fully stocked (58%), and stocked with extent not known (4%). Seventy-nine percent of the volume, or 23 264 million m^3, exists on 160.8 million ha of fully stocked forest (see Table 12). Figure 21 shows the percent of forest land that is stocked, including the classes stocked, partially stocked and fully stocked; Figure 22 shows the area of forest land where stocking is unknown, according to disturbance class.

Appendix I: Table I-9 shows the area of forest land (in thousands of hectares) by stocking class and province and territory.

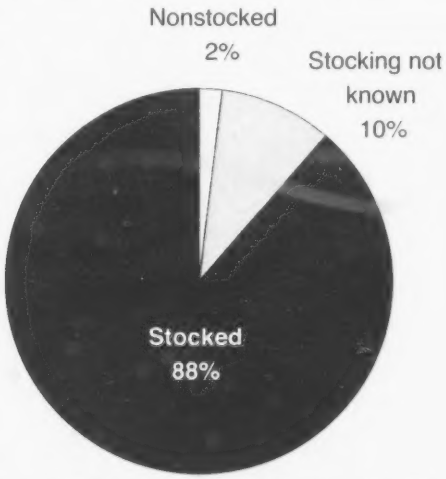


Figure 20. Area of forest land by grouped stocking class

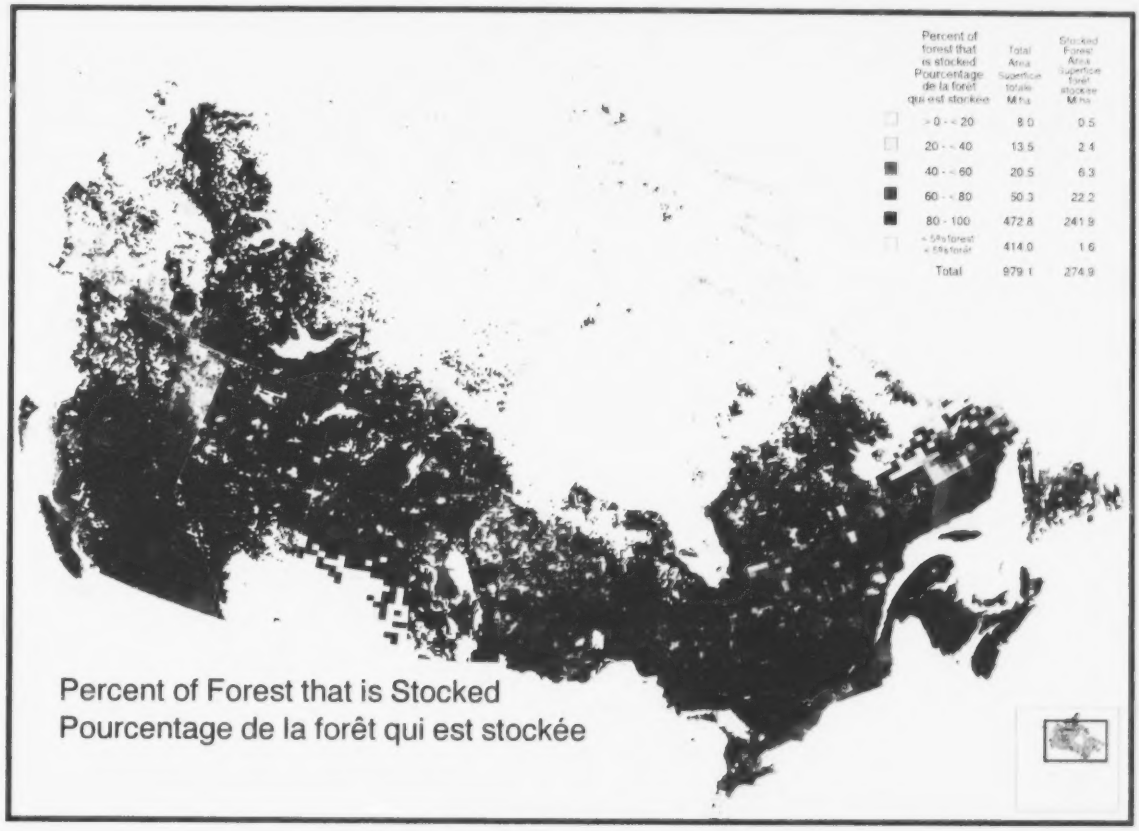

Percent of forest that is stocked Pourcentage de la forêt qui est stockée
Total Area Superficie totale M ha
Stocked Forest Area Superficie forêt stockée M ha
> 0 - < 20 8.0 0.5
20 - < 40 13.5 2.4
40 - < 60 20.5 6.3
60 - < 80 50.3 22.2
80 - 100 472.8 241.9
< 5% forest < 5% forêt 414.0 1.6
Total 979.1 274.9
Percent of Forest that is Stocked
Pourcentage de la forêt qui est stockée

Figure 21. Percent of forest that is stocked

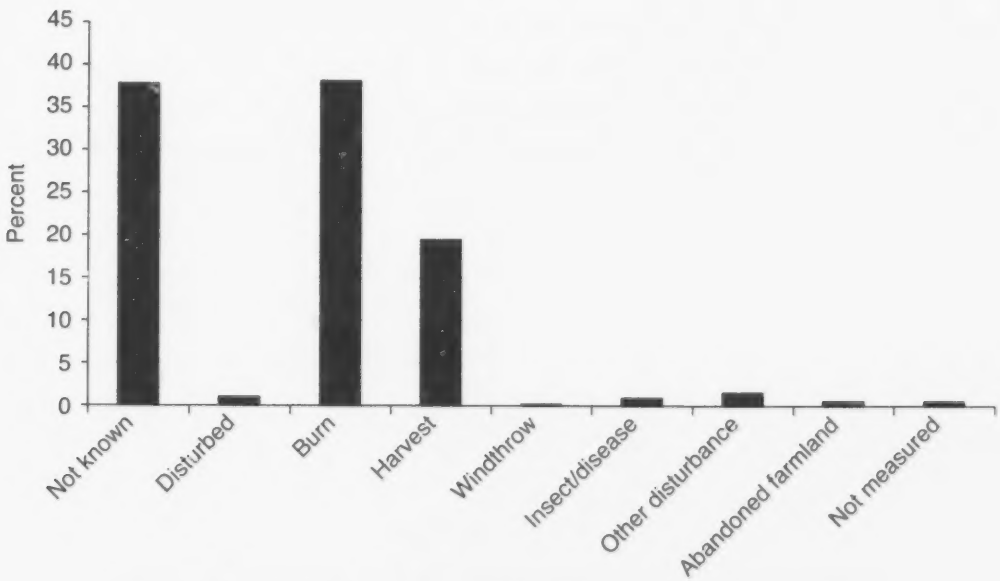


Figure 22. Percentage of area where stocking is not known, by disturbance class

3.6 Age and Maturity

Knowing the ages of forests is important for the management of Canada's almost exclusively even-aged forests. Age can be difficult to determine from air photos and almost impossible to estimate from satellite imagery; about 37% of the stocked forest lacks age information. This is represented in Figure 23 (the "not available" class). The map also shows that the highest age classes are in British Columbia, where long-lived species such as Douglas-fir and western redcedar occur.

Where age information is available, the majority of the stocked forest (78%) is as old as 120 years, with 22% being older than 120 years (Figure 24). Average volume and biomass increase with age, but the rates of increase slow with age (Figure 25). Total volume of the stocked forest up to 120 years old makes up 63% of the total volume where age information is known; 37% of the total volume of known-age forest is from trees older than 120 years (Figure 24). Total biomass of the stocked forest where age is known is similar, with 64% being from trees as old as 120 years, and 36% from trees older than 120 years. Appendix I: tables I-10 to I-14 detail area, volume and biomass according to age class and province.

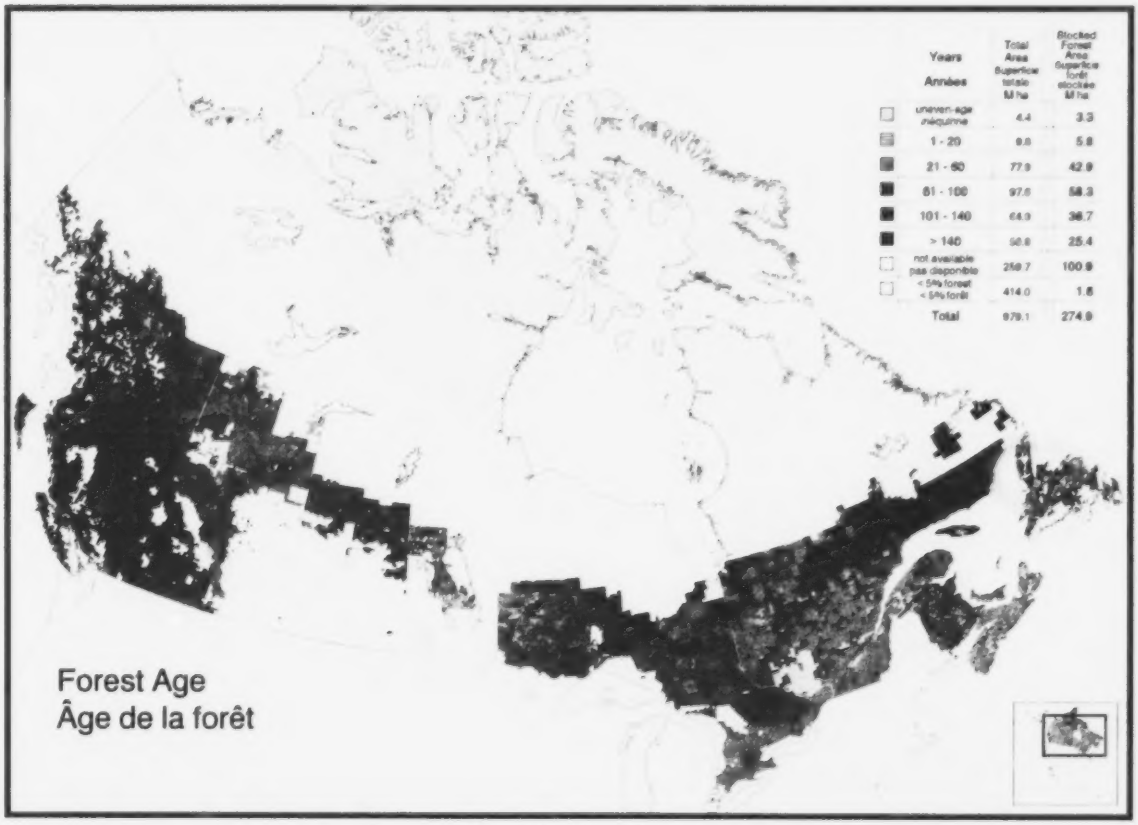


Figure 23. Forest Age

Age is an objective description of the forest condition, whereas maturity is measured against the expected life expectancy of a tree species. For example, black spruce is a long-lived species, and can live 300 years; trembling aspen, however, typically becomes over-mature at about 80 years. Most forests in Canada are even aged, as many species regenerate at the same time following a fire or harvest; only a small percentage are uneven aged. As with age information, maturity information is not available for all of Canada's forests (Figure 26), because it is not possible to determine maturity of forests from data sources such as satellite imagery. The stocked forest with maturity information available represents 70% of the total stocked forest, and accounts for 88% of the total volume.

The most volume and biomass occurs, as expected, in mature forests, which account for 44% of the stocked forest area, 58% of the total volume, and 55% of the total biomass. Immature forests account for 36% of the area, 28% of the volume, and 31% of the biomass. Figures 27 and 28 summarize percent of total area, volume and biomass by maturity class; Appendix I: tables I-15 to I-19 detail area, volume and biomass by maturity class for each province and territory.

Figure 26 maps predominant maturity class by area. Most of Canada's forests are either immature or mature. Most tree species in British Columbia, although old, are not considered over-mature from the forest management perspective, as they are long-lived species.

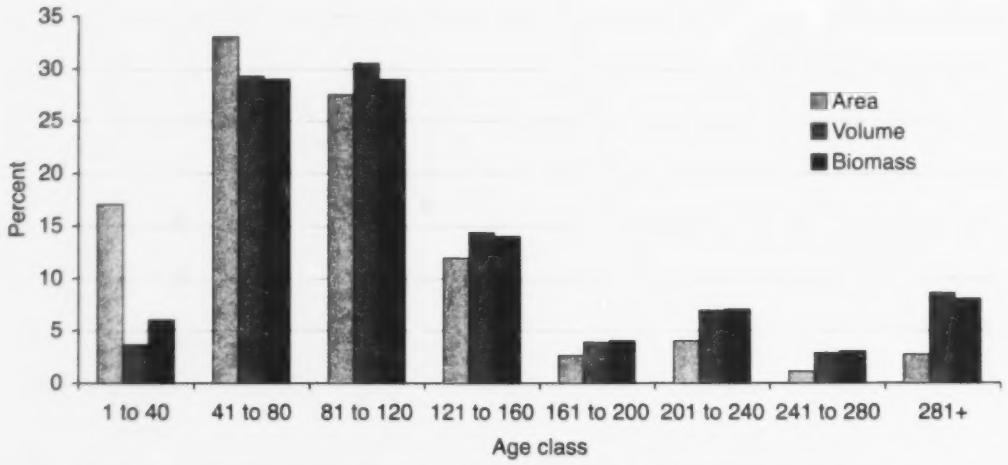


Figure 24. Percents of stocked forest area, total volume, and total biomass by age class

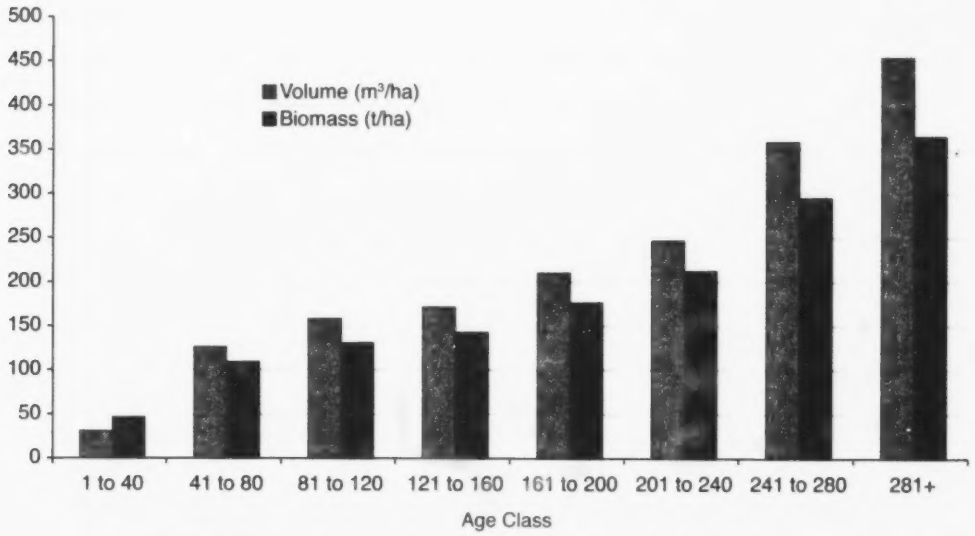


Figure 25. Average volume and average biomass on stocked forest by age class

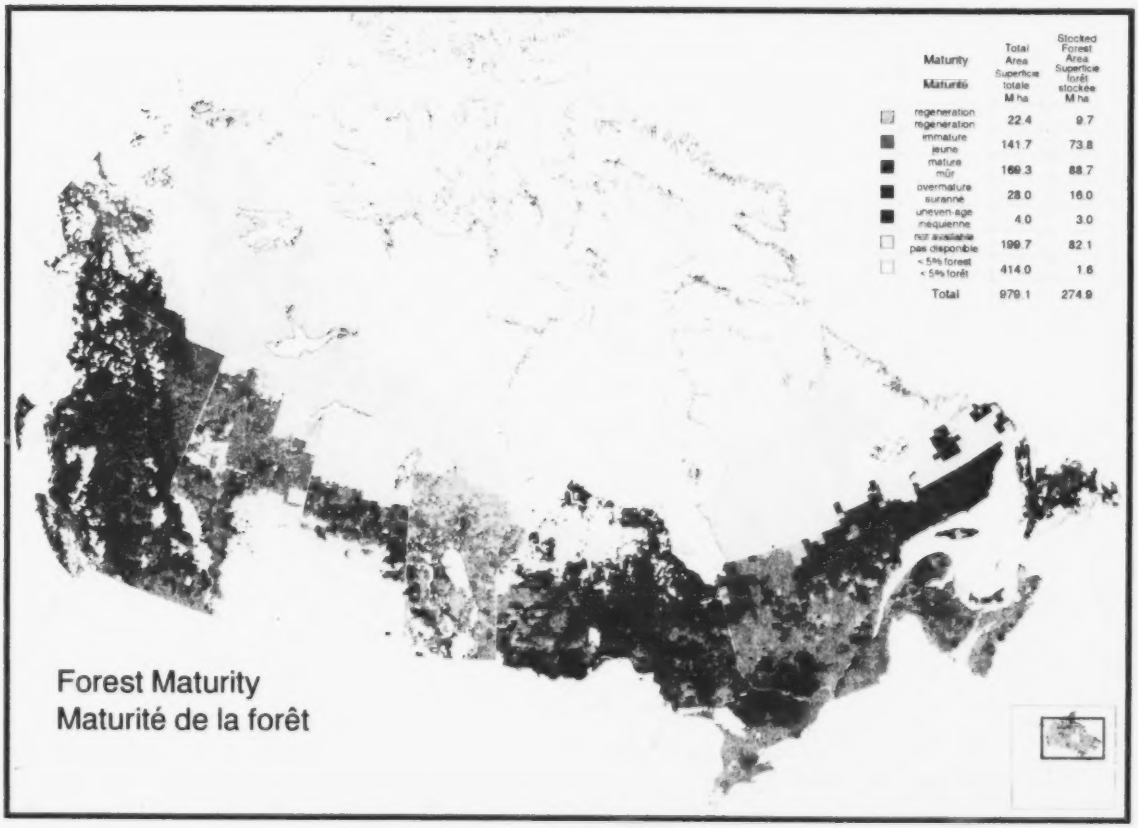

Maturity
Maturité
Total Area Superficie totale M ha
Stocked Forest Area Superficie forêt stockée M ha
regeneration régénération 22.4 9.7
immature jeune 141.7 73.8
mature mûr 169.3 88.7
overmature surannè 28.0 16.0
uneven-age inequienne 4.0 3.0
not available pas disponible 199.7 82.1
< 5% forest < 5% forêt 414.0 1.6
Total 979.1 274.9
Forest Maturity
Maturité de la forêt

Figure 26. Maturity

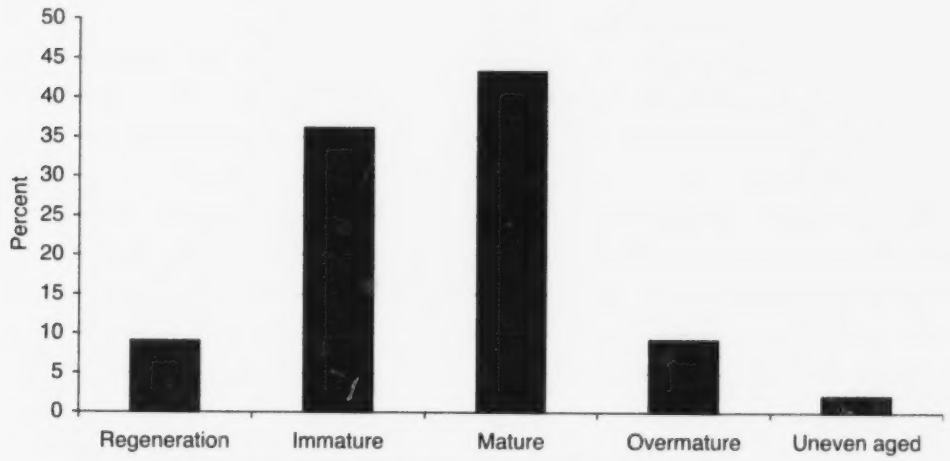


Figure 27. Percent of stocked forest land area by maturity class

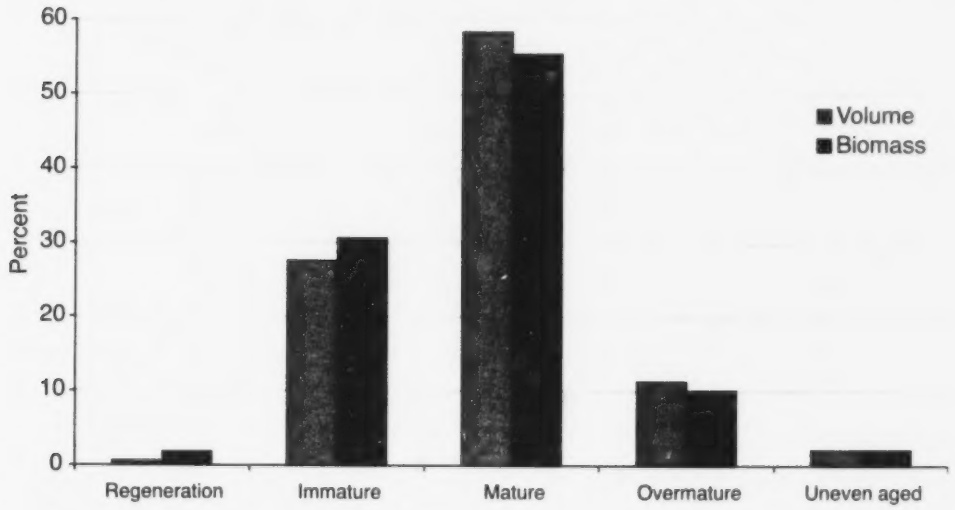


Figure 28. Percents of total volume and biomass on stocked forest land by maturity class.

3.7 Forest type

Canada's forests are described in CanFI2001 by percentage canopy cover of coniferous and broadleaved species within a forest stand. A stand is considered softwood when 76% to 100% of the canopy consists of coniferous species, mixedwood when 26% to 75% of the canopy consists of coniferous species, and hardwood when 0% to 25% of the canopy consists of coniferous species. The proportions are similar when area and volume are considered: 65% of the stocked forest land area is classed as softwood, 22% as mixedwood, and 12% as hardwood; 69% of the total volume and 68% of the total biomass are contained within the softwood forest type, 18% of the volume and 19% of the biomass are within mixedwood , and 13% of both volume and biomass are within hardwood (see Table 13 for total areas, total and average volumes, and total and average biomasses). Appendix I: tables I-20 to I-24 list area, volume and biomass on stocked forest land by forest type and province and territory.

Figure 29 maps predominant forest types for all of Canada. Hardwoods are common in the southern extent of the forest lands of Quebec through to Alberta and into northeastern British Columbia; softwoods dominate the east and west coasts. From the hardwood forest zone, there is a northward progression through predominantly mixedwoods to almost entirely softwoods. In the forested zone's northern reaches, mixedwood forest becomes dominant again, particularly in northern Saskatchewan and the Northwest Territories.

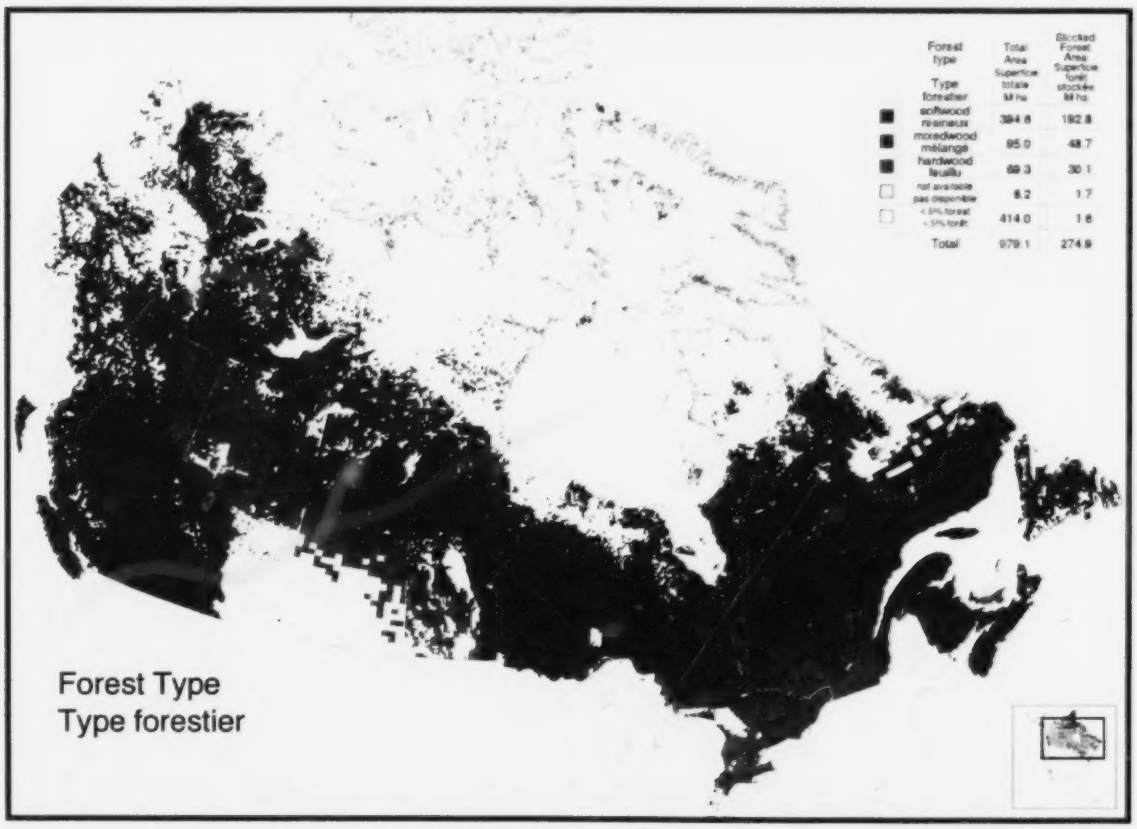


Figure 29. Forest Type

3.8 Predominant Genera

Canada's stocked forests are further described according to predominant genera indicated in source inventories' stand descriptions. Depending on relative abundances of species in a stand, the predominant genus is not necessarily the genus of the first species listed. For example, the species description for a stand may indicate that white birch covers 40% of the area, black spruce 35%, and red spruce 25%. This stand would be classified as having a predominant genus of spruce (60% of the stand) rather than birch (40%).

Because data sources—specifically satellite imagery—for many areas cannot distinguish species, only whether a stand is coniferous or deciduous, the most abundant predominant genus class description in Canada is recorded as unspecified coniferous species (Figure 30). The reason that unspecified broadleaved species are not as prevalent as unspecified conifers is that satellite imagery is, for the most part, used in the remote northern regions of the country, where forests are either entirely coniferous or dominated by conifers. As seen in Figure 31, unspecified conifers do not make up the majority of volume, because volumes in the northern regions are small compared to the rest of the country (see Figure 37, Coniferous volume).

In area, volume and biomass, the three most prevalent specified predominant genus values are spruce, pine and poplar. Appendix I: tables I-25 to I-27 detail area, total volume and total biomass by predominant genus and province and territory.

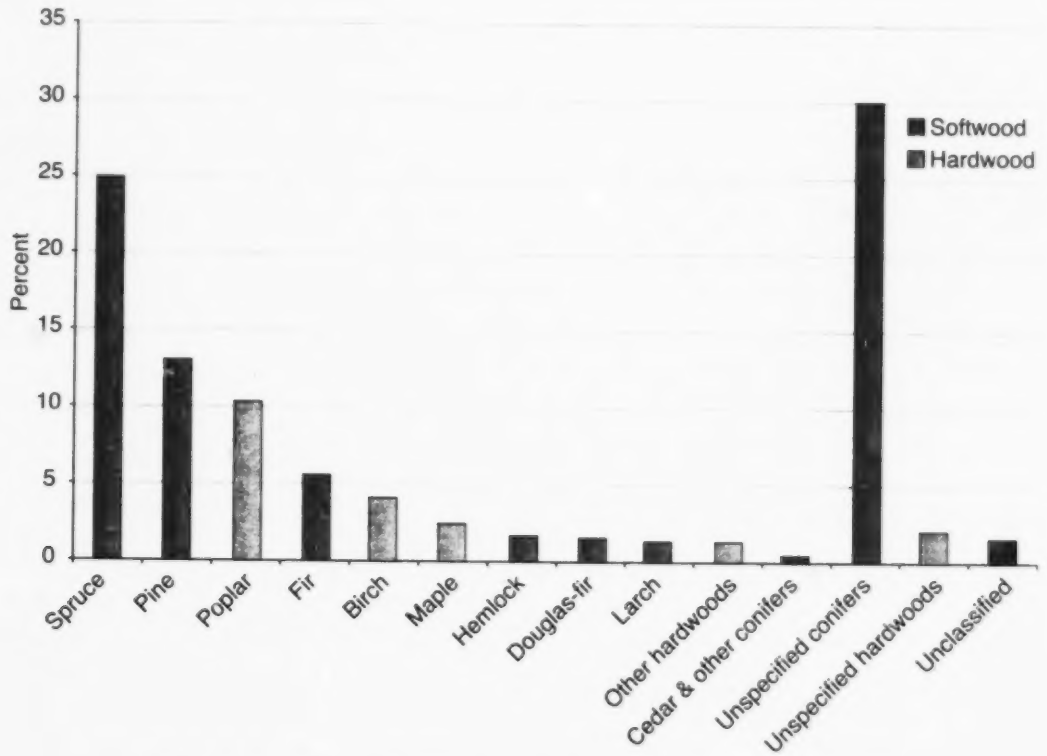


Figure 30. Area percent of stocked forest by predominant genus in the canopy.

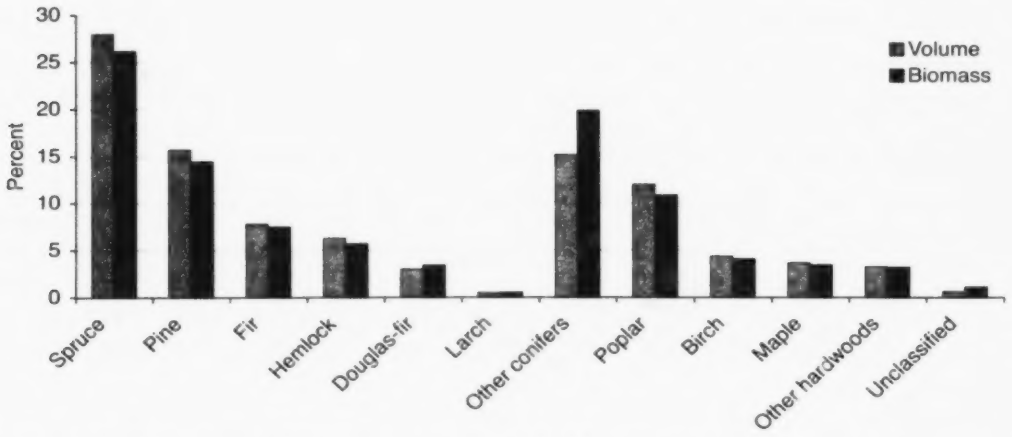


Figure 31. Total volume and biomass percents on stocked forest by predominant genus in the canopy

3.9 Lead species

Canada's forests can also be described according to lead species, the first species listed in forest stand descriptions. Examination of area covered by the leading species grouped at the genus level yields results similar to the predominant genus area results. Figure 32 shows the area percent of stocked forest by grouped leading species; compared to Figure 30, there is little difference: the percentage of unspecified conifers is slightly less and the percentages of spruces and of firs are higher.

Figure 33 shows relative percentage of forest type for each grouped lead species: where the leading species are spruce, 90% of the stands are softwood forest type; where the leading species are birches, about 38% of the stands are hardwood stands, about 60% are mixedwood stands, and 2% are softwood stands. As expected, coniferous species are lead species in mostly softwood forest types, and broadleaved species lead in a much higher proportion of mixedwood forest types than coniferous species do. Table 14 shows area of stocked forest by grouped leading species and forest type. Appendix I: Table I-28 lists area for each of the leading species by forest type. Appendix I: Table I-29 provides coniferous, broadleaved, and total volume summaries for records with the listed leading species.

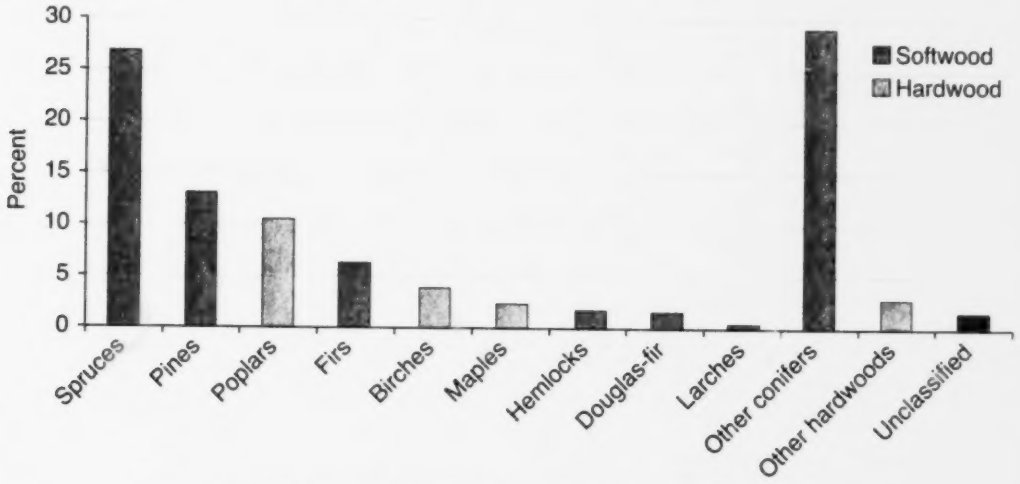


Figure 32. Area percent of stocked forest land by lead species.

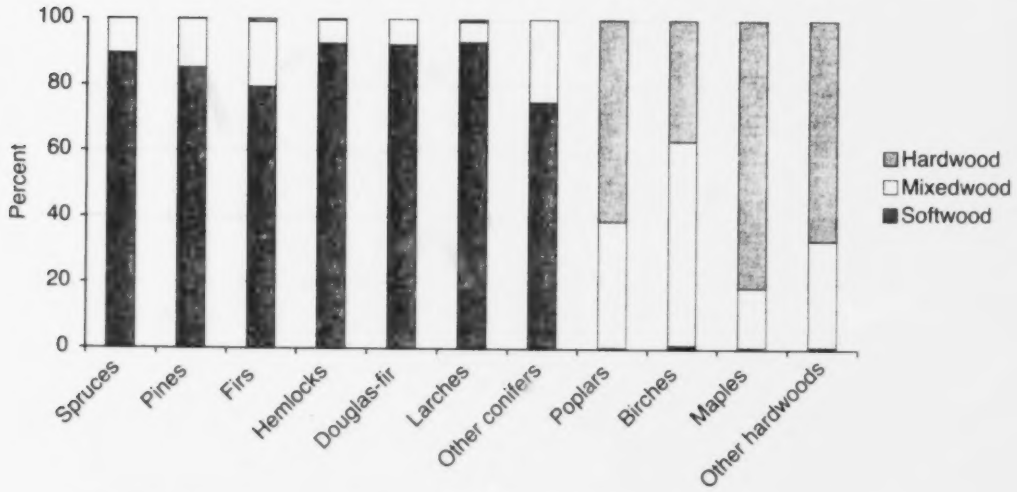


Figure 33. Area percentage of forest types for each grouped lead species in the canopy.

3.10 Volume

Volume information in CanFI2001 is generally derived from volume tables developed from field samples for provincial forest management inventories. It is stored as cubic metres per hectare for each of 87 species. The number of species is so large because different species grow in different parts of Canada, and because source inventories vary in the detail to which their volume tables were created: some include what might be considered minor species, and some group species (e.g., maple, instead of red maple or sugar maple). In order to maintain as much detail as possible, CanFI2001 does not aggregate species to the lowest common denominator.

Table 15 lists volumes for species, grouped for the purpose of this report, in cubic metres, rather than in the millions of cubic metres usually used, in order to show contributions of minor species to the total. Spruces make up more than one-third (10 billion m^3) of the more than 29 billion m^3 of total wood volume in Canada. Pines and the poplar/aspen group contribute 5 billion m^3 and 4 billion m^3, respectively. Figure 34 shows percentage by volume of grouped species. Unlike Figure 32, which shows percentage based on area and species is the one listed first in a forest stand description, Figure 34 is based on volume tables. Because volume tables are developed from field samples, volumes are rarely calculated for unspecified conifers: thus, Figure 34 does not list unspecified conifers as the highest percentage.

Figure 35 maps genera with the most volume in each mapping unit. A mapping unit may have the most volume represented by firs, but the majority of the total volume in the mapping unit may be represented by broadleaved genera. In Figure 35, this mapping unit would be classed as fir, whereas, when figures 37 and 38 are compared, the mapping unit may indicate more broadleaved volume than coniferous volume. The larch, cedar and other conifer species group is shown to be predominant in northern Quebec, because volume information from areas with similar characteristics was extrapolated to areas for which original data sources lacked volume information.

Figure 36 shows total wood volume in Canada. The highest volume is found in coastal British Columbia, with the rest of the province also having high volumes. Ontario is the province with the second highest volumes per mapping unit.

Figure 37 maps coniferous volume. British Columbia, Ontario, Quebec and Alberta have high concentrations of coniferous volumes. The map of broadleaved volume (Figure 38) indicates that southern Ontario, the southern edge of forest in Saskatchewan, and the region from central Alberta to northeastern British Columbia have higher concentrations of broadleaved volumes than other areas of the country.

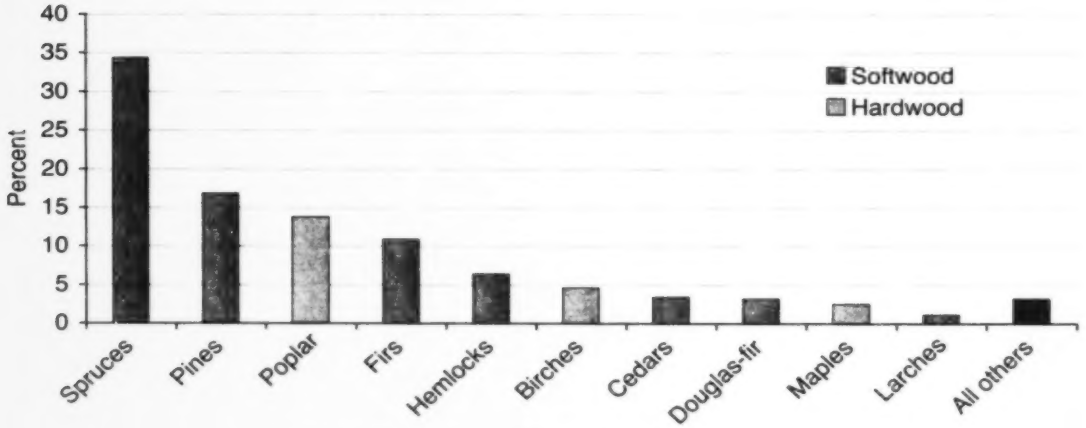


Figure 34. Volume percent by species, grouped by genus

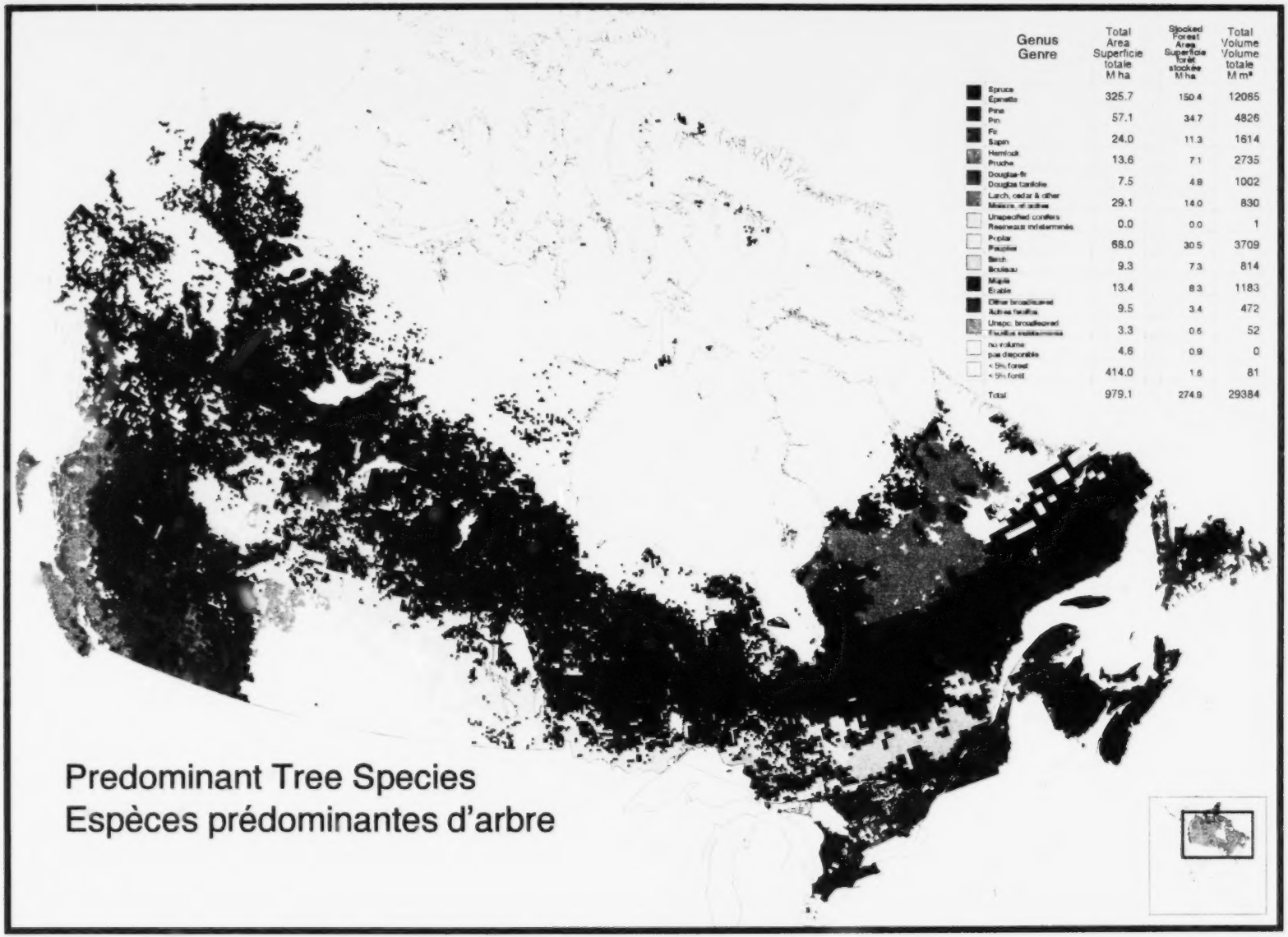
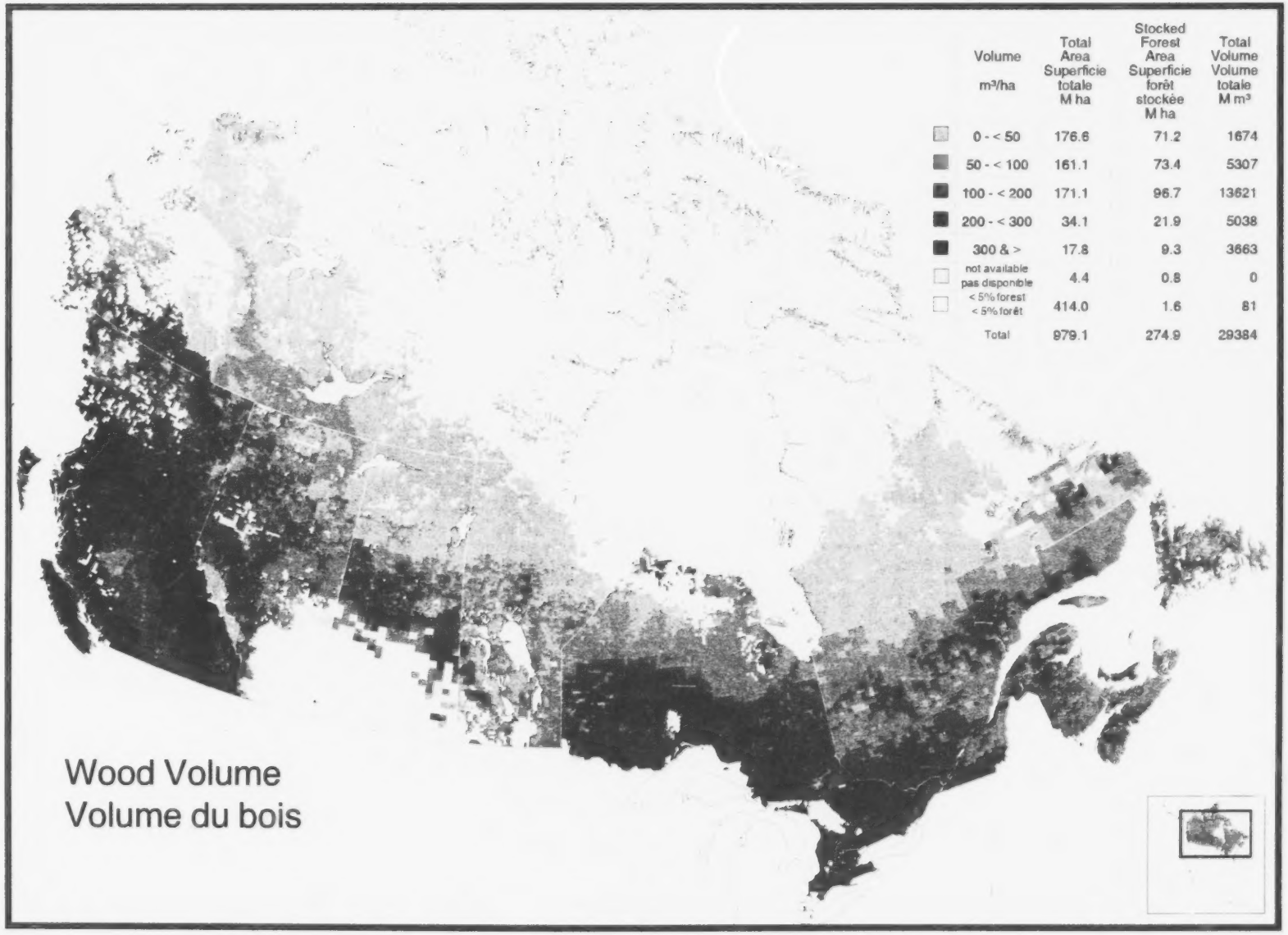


Figure 35. Predominant tree species, grouped by genus



Volume m³/ha	Total Area Superficie totale M ha	Stocked Forest Area Superficie forêt stockée M ha	Total Volume Volume totale M m³
0 - < 50	176.6	71.2	1674
50 - < 100	161.1	73.4	5307
100 - < 200	171.1	96.7	13621
200 - < 300	34.1	21.9	5038
300 & >	17.8	9.3	3663
not available pas disponible	4.4	0.8	0
< 5% forest < 5% forêt	414.0	1.6	81
Total	979.1	274.9	29384

Figure 36. Wood volume

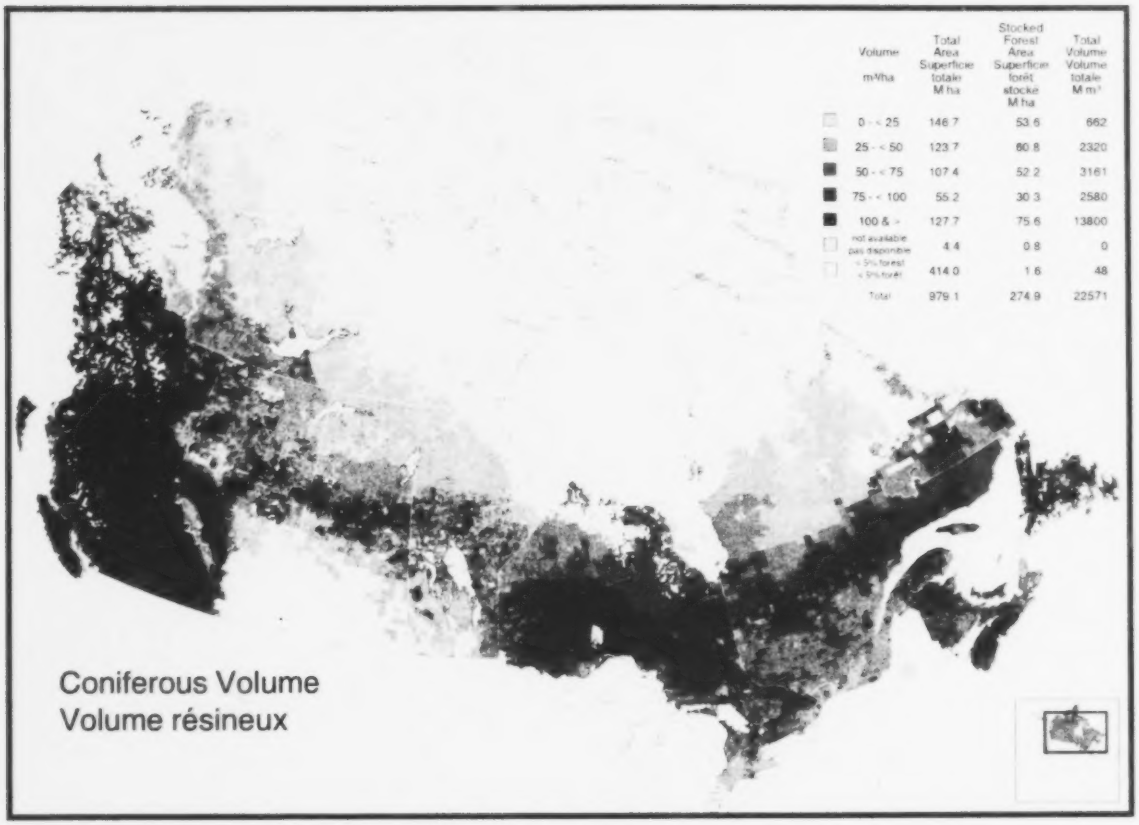

Volume
m³/ha
Total Area Superficie totale M ha
Stocked Forest Area Superficie forêt stocke M ha
Total Volume Volume totale M m³
0 - < 25 146.7 53.6 662
25 - < 50 123.7 80.8 2320
50 - < 75 107.4 52.2 3161
75 - < 100 55.2 30.3 2580
100 & > 127.7 75.6 13800
not available pas disponible 4.4 0.8 0
< 5% forest < 5% forêt 414.0 1.6 48
Total 979.1 274.9 22571
Coniferous Volume
Volume résineux

Figure 37. Coniferous volume

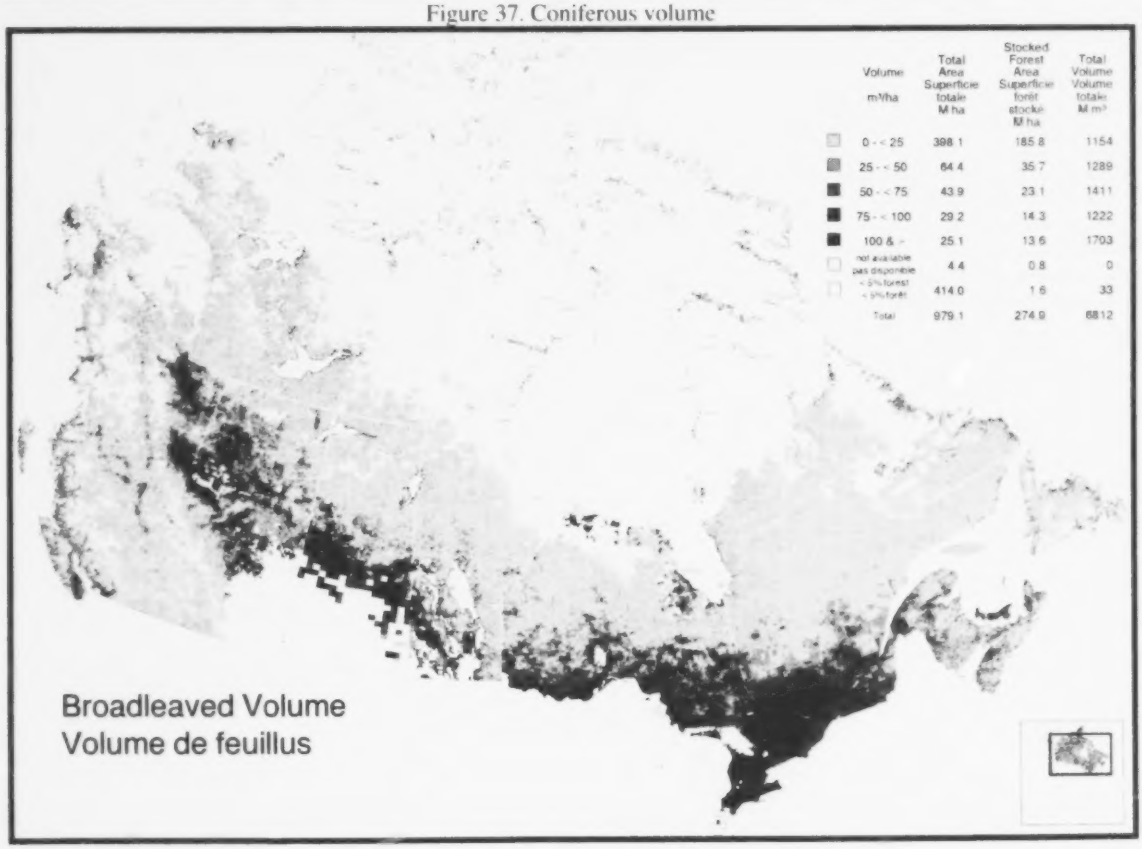

Volume
m³/ha
Total Area Superficie totale M ha
Stocked Forest Area Superficie forêt stocke M ha
Total Volume Volume totale M m³
0 - < 25 398.1 185.8 1154
25 - < 50 64.4 35.7 1289
50 - < 75 43.9 23.1 1411
75 - < 100 29.2 14.3 1222
100 & > 25.1 13.6 1703
not available pas disponible 4.4 0.8 0
< 5% forest < 5% forêt 414.0 1.6 33
Total 979.1 274.9 6812
Broadleaved Volume
Volume de feuillus

Figure 38. Broadleaved volume

3.11 Biomass

Biomass is estimated using the methods described in section 2.7, but more specifically, stem wood, stem bark, branch and foliage biomass, as well as an estimate of dead biomass, in tonnes per hectare are predicted for each record in the CanFI2001 volume tables. However, unlike volume values, biomass values are aggregated across tree species. Four biomass components and the estimate of dead biomass are stored for each record, regardless of how many species may be represented in that record. The estimated biomass reflects species diversity, as it is comprised of a weighted average that includes all the species listed, but retains only one value for each component. These biomass-volume tables, along with the look-up tables for vegetated areas with no volumes, are then merged with the CanFI2001 area tables, and inherit the classifiers stored there. From these, summary tables, maps, and figures can be produced: Figure 39, which shows the total living and dead biomass by province, and Figure 40, the map of average biomass, are examples.

Percentage distribution of live biomass among the four components, summarized for leading coniferous and broadleaved species, are shown in Figure 40, and details for grouped leading species are shown in Table 16; full details by individual leading species are provided in Appendix I: Table I-30. The proportion contributed by stemwood is nearly identical for coniferous and broadleaved species: the proportionally thicker bark and branches of broadleaved species contributes more to biomass than do those of coniferous species; however, foliage contributes almost twice as much to coniferous biomass than to broadleaved biomass.

The map of average biomass (Figure 41) shows biomass derived from the forest inventory only: no estimation of biomass associated with agricultural crops on the prairies and in southern Ontario is included.

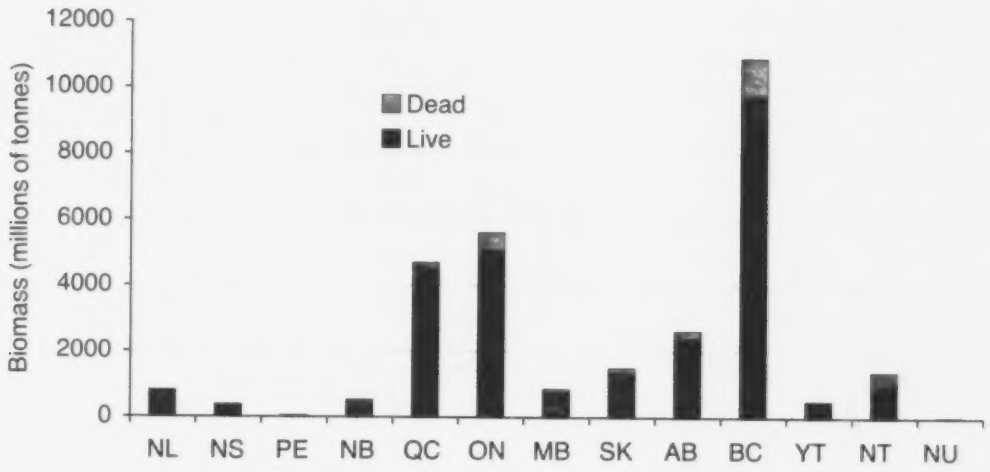


Figure 39. Total biomass of living and dead matter by province and territory.

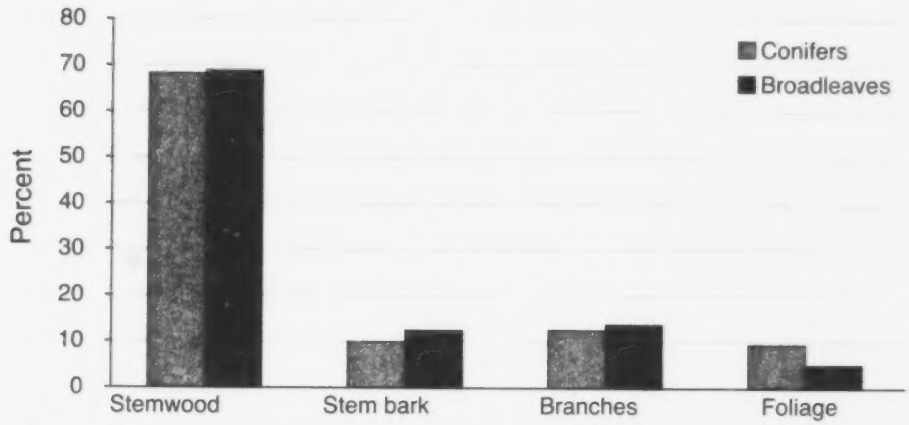


Figure 40. Distribution of biomass by component for coniferous and broadleaved species.

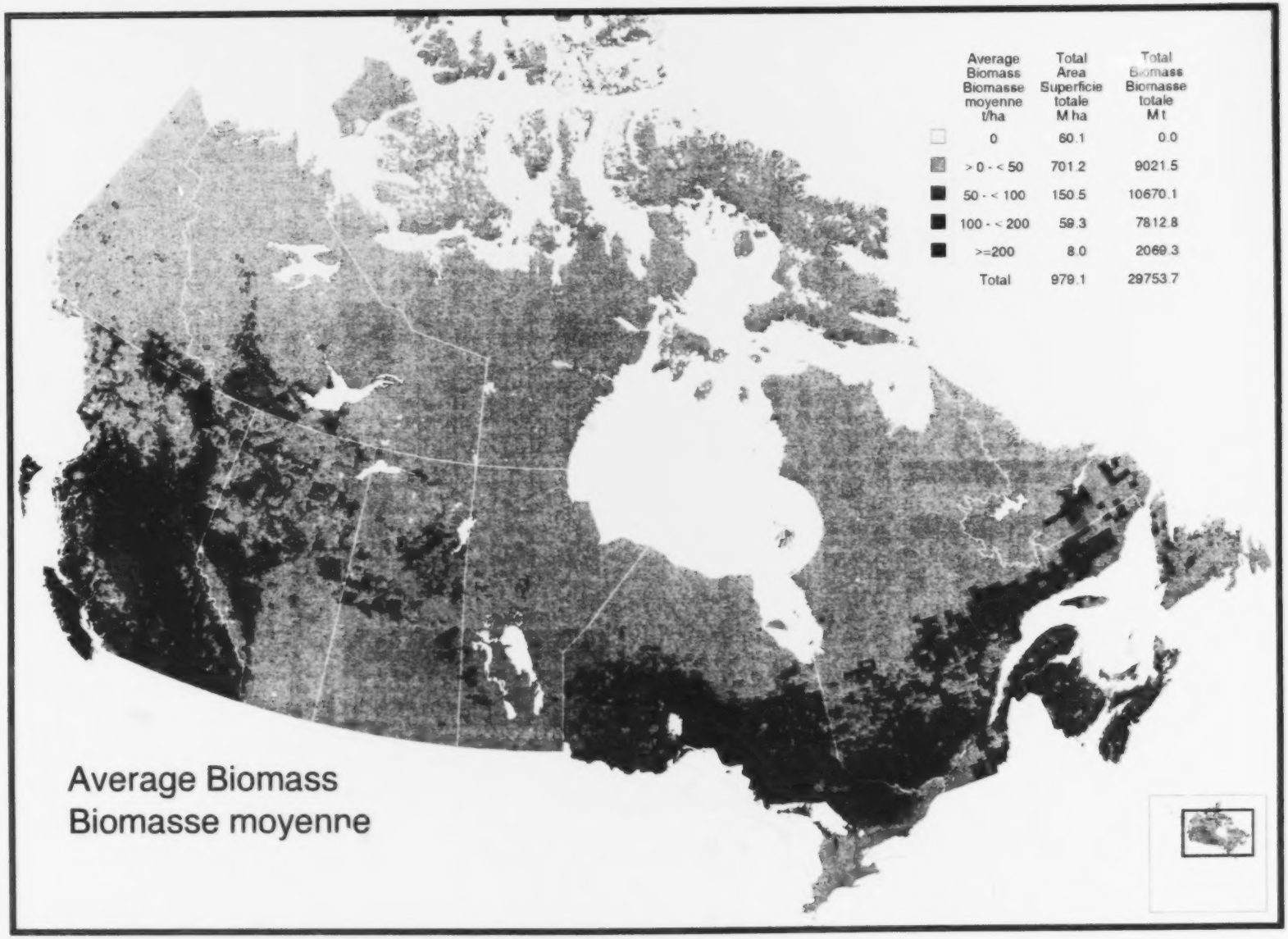

Average Biomass
Biomasse moyenne
Average Biomass Biomasse moyenne t/ha
Total Area Superficie totale M ha
Total Biomass Biomasse totale M t
0 60.1 0.0
> 0 - < 50 701.2 9021.5
50 - < 100 150.5 10670.1
100 - < 200 59.3 7812.8
>=200 8.0 2069.3
Total 979.1 29753.7

Figure 41. Average biomass

3.12 Access

Because of Canada's size, access to its forests is an important component in determining how much wood is available for harvesting. Figure 42 shows the pattern of road access in Canada, along with the area where forest occurs in more than 5% of a mapping unit. A mapping unit is classed as accessible if there is a road within it or on its border. Appendix I: Table I-31 describes, by province and territory, the area and volume reduced, or netted down, by applying various restrictions: forest and other wooded land; forest land; stocked forest; not reserved stocked forest; accessed not reserved stocked forest. Figure 43 illustrates netted-down area and volume for the country: stocked forest land has 100% of Canada's wood volume, whereas nonreserved stocked forest has 93.6% of the volume, and accessed nonreserved stocked forest has 59.3% of the volume. Area becomes netted down, from forest and other wooded land at 41.1% of the area of Canada, to accessed nonreserved stocked forest at 13.1% of the area of Canada.

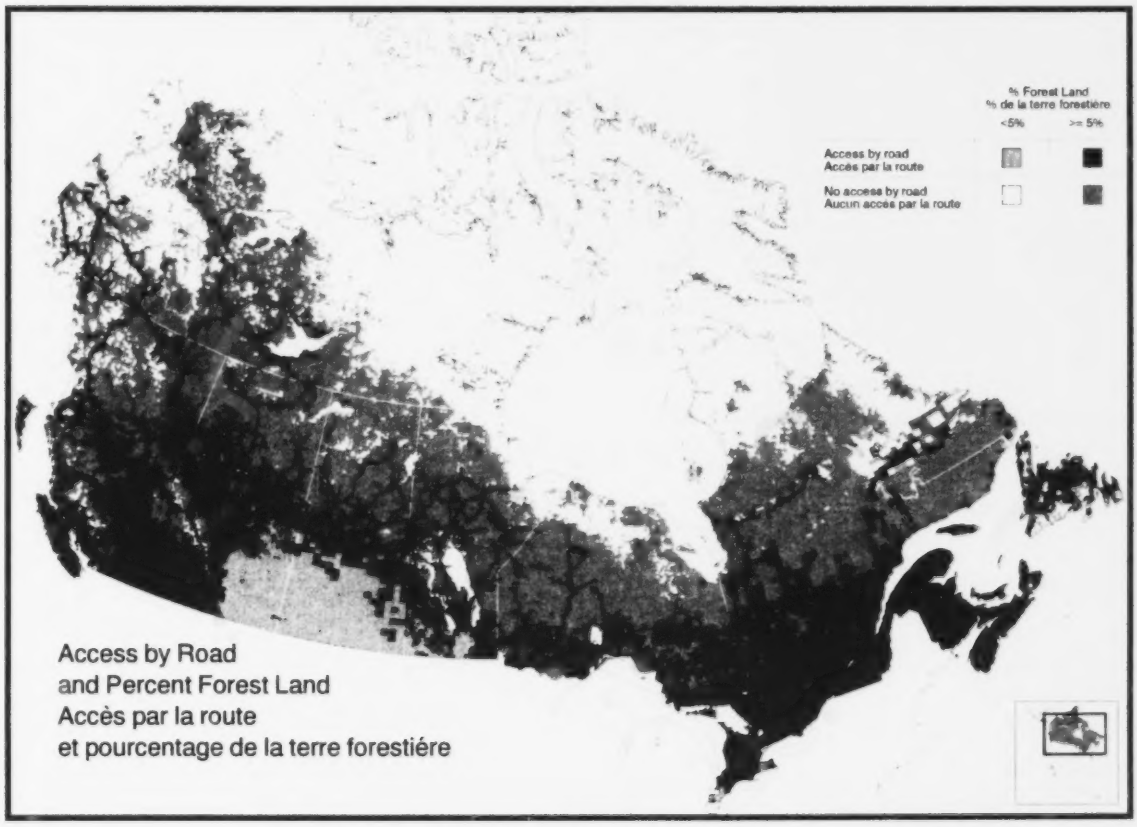


Figure 42. Access by road and percent forest land

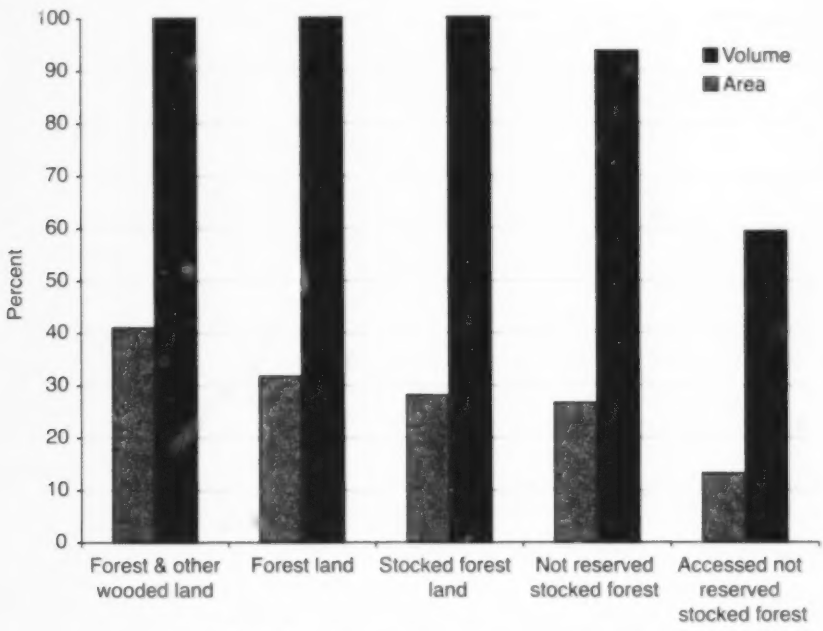


Figure 43. Area and volume percents netted down.

4. Regional Summaries

4.1 Forest Regions

Canada's forest geography was described by J.S. Rowe (1972) in *Forest Regions of Canada*. The criteria to define forest include "the distribution and range of conspicuous tree species, their life-forms (broadleaved or needle-leaved), the physiognomy and relative aerial extent of the communities in which they are associated, and the patterning of the total vegetation." The country is divided into forest regions (Figure 44), within which are nested forest sections. A forest region is "a major geographic belt or zone, characterized vegetationally by a broad uniformity both in physiognomy and in the composition of the dominant tree species." A forest section is "a geographic area possessing an individuality which is expressed relative to other sections in a distinctive patterning of vegetation and of physiography." The boundaries delineating these regions and sections have been digitized and combined with the CanFI2001 summary unit boundaries. Thus, whereas the above-mentioned report qualitatively describes the forest regions and sections, CanFI2001 quantifies the forest within them.

Table 17 summarizes the area and volume by forest region. According to it and to Figure 45, the boreal forest region comprises 196.3 million ha of forest and other wooded land, or just over 75% of Canada's total area, and contains 15 359.2 million m^3, or more than 50% of the total volume. The coast forest region accounts for only 1% of Canada's forest and other wooded land (5.1 million ha), but supports 9% of the total volume (20 646.7 million m^3).

Other analyses can be performed; the example serves to illustrate the capability.

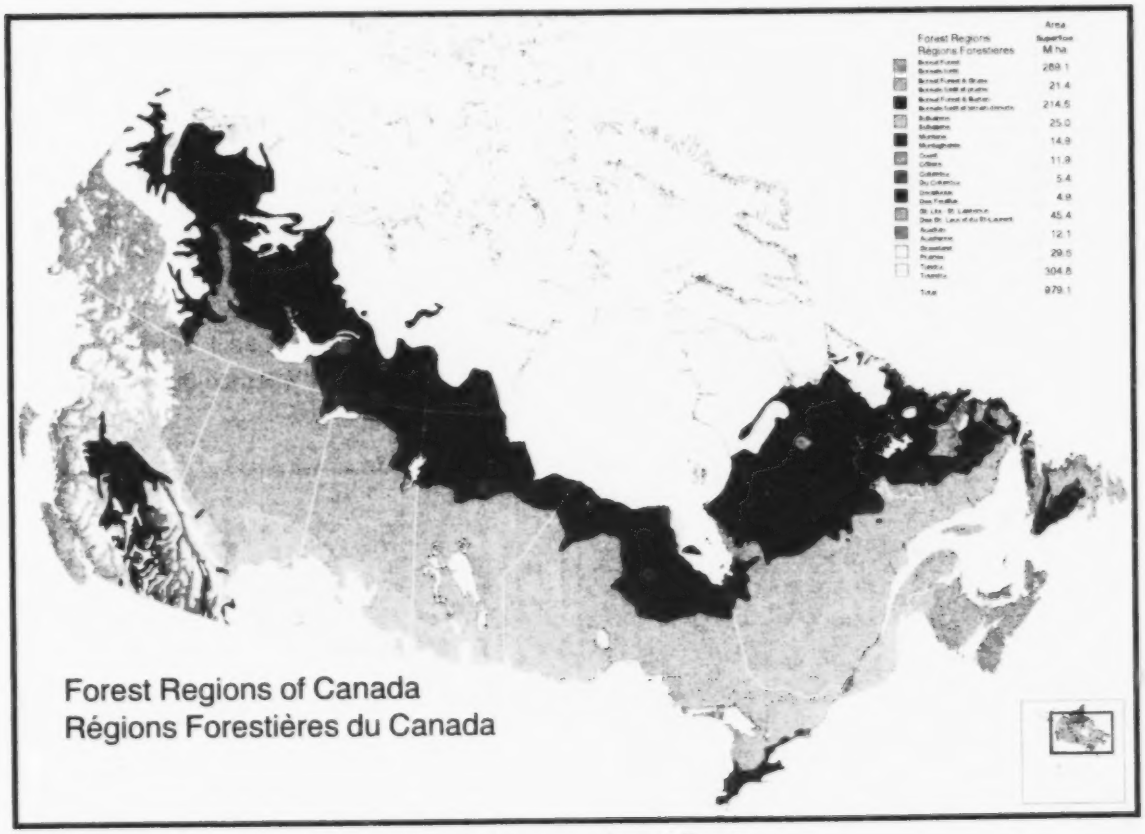


Figure 44. Forest regions of Canada

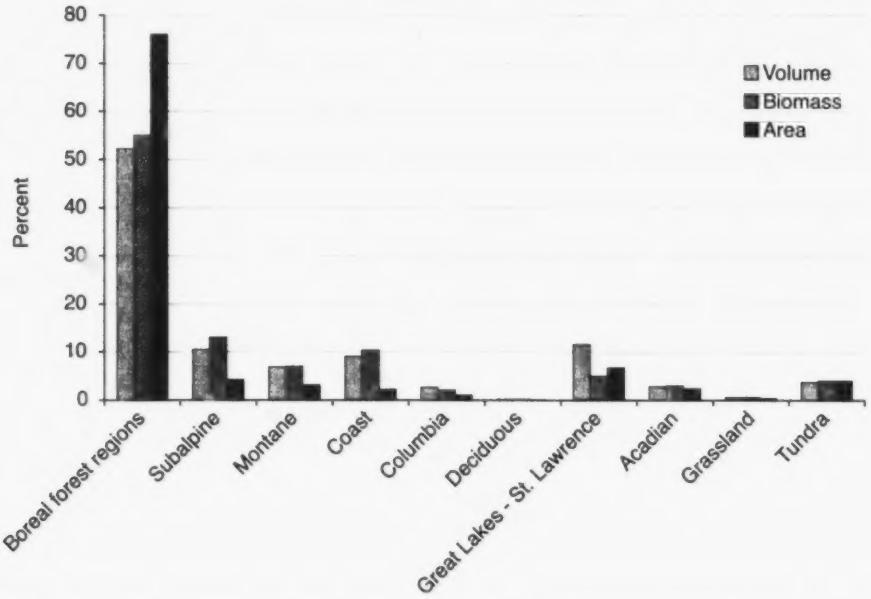


Figure 45. Volume, biomass, and area percents of forest and other wooded land by forest region.

4.2 Terrestrial Ecozones of Canada

The *National Ecological Framework for Canada* (Ecological Stratification Working Group 1995) describes an ecozone as "an area of the earth's surface representative of large and very generalized ecological units characterized by interactive and adjusting abiotic and biotic factors." Ecoregions are subdivisions of an ecozone, and are "characterized by distinctive regional ecological factors. Including climatic, physiography, vegetation, soil, water, fauna and land use." The report describes each of Canada's ecozone and ecoregion in terms of those factors. The boundaries of the ecozones and ecoregions have been digitized and combined with CanFI2001 summary-unit boundaries (Figure 46), so that conditions within them can be quantified.

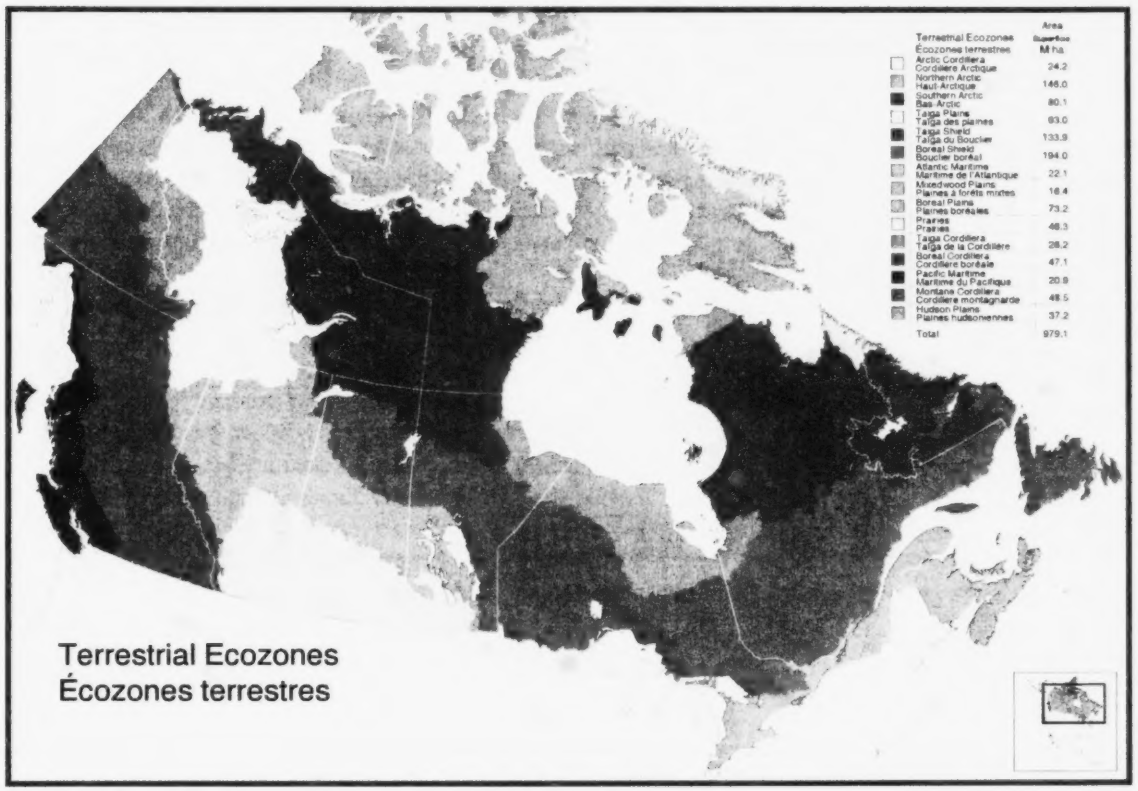


Figure 46. Terrestrial ecozones

Table 18 summarizes area and volume in each ecozone. The table and Figure 47 show:

- The Boreal Shield has the largest area of forest and other wooded land (almost 36% of the total) and supports 37% of the total volume;
- The Taiga Plains and Taiga Shield both have markedly larger percentages of forest and other wooded land compared to the wood volume they support (8.9% area compared to 4.6% volume, and 12% area compared to 2.3% volume, respectively);
- The Pacific Maritime ecozone contains only 3% of Canada's area of forest and other wooded land, but accounts for 12.2% of the wood volume;
- The Montane Cordillera has 8.9% of the forest and other wooded land area, but supports 19.8% of Canada's wood volume.

Other analyses can be performed; this example serves to illustrate the capability.

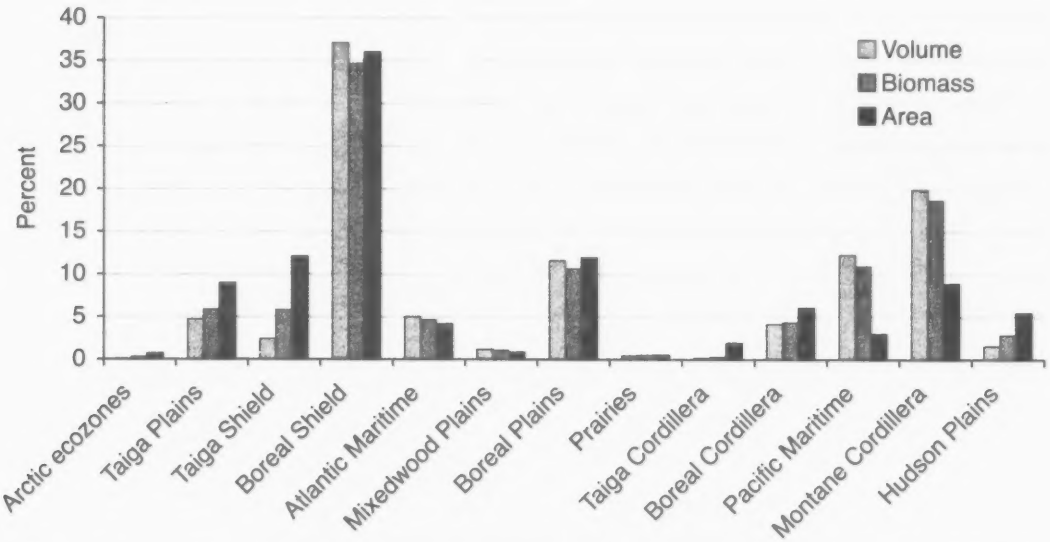


Figure 47. Area, volume, and biomass percentages of forest and other wooded land by terrestrial ecozone

4.3 Boreal Region

The previous two sections indicate the magnitude of forests in the boreal region in Canada. Their importance is also highlighted in the following:

- The theme of the 2005 National Forest Week was "The Boreal Forest: A Global Legacy" (Natural Resources Canada);
- *The State of Canada's Forests 2004-2005* (CFS 2005) report focuses on the boreal region.

Figure 48 shows the extent of Canada's boreal region. The boundaries of this region have been defined based on terrestrial ecozones, ecoregions and, in some cases, ecodistricts, which are subdivisions of an ecoregion. These boundaries have been applied to the CanFI2001 summary units, and the results are retained in the database, thereby allowing analyses of data within the boreal region to be performed.

Table 19 lists the terrestrial ecozones that make up Canada's boreal region, as well as area and percentage of each ecozone within the region.

Table 20 lists area in thousands of hectares for each of the nonvegetated land classes; Table 21 lists area, volume and biomass for each of the vegetated land classes. The boreal region spans 544.6 million ha.; of this, about 310 million ha are forest and other wooded land. Figure 49 compares the area percentage of grouped land classes in Canada to those in Canada's boreal region: the boreal region has a higher proportion of forest and of other wooded land than occurs in Canada as a whole; Canada has proportionately more agricultural land, naturally vegetated non-treed land, and naturally nonvegetated land than does the boreal region. The boreal region also has a greater proportion of fresh water than exists in all of Canada.

Table 22 and Figure 50 compare the total volume by forest type in Canada to that in the boreal region: the boreal region contains more than half of the total volume of Canada, with most volume occurring in softwood forest types. Canada as a whole has a much higher proportion of volume occurring in the softwood forest types than the boreal region does, due to the large volume that occurs in softwood forest types in British Columbia outside the boreal region—particularly along the coast.

Figure 51 compares the volume percent by grouped leading species in the boreal region to that in Canada. In general, the proportions are similar, with volume percent for other conifers being slightly higher in the boreal region, and spruces, pines, and firs contributing slightly higher percents of total volume in Canada than they do in the boreal region.

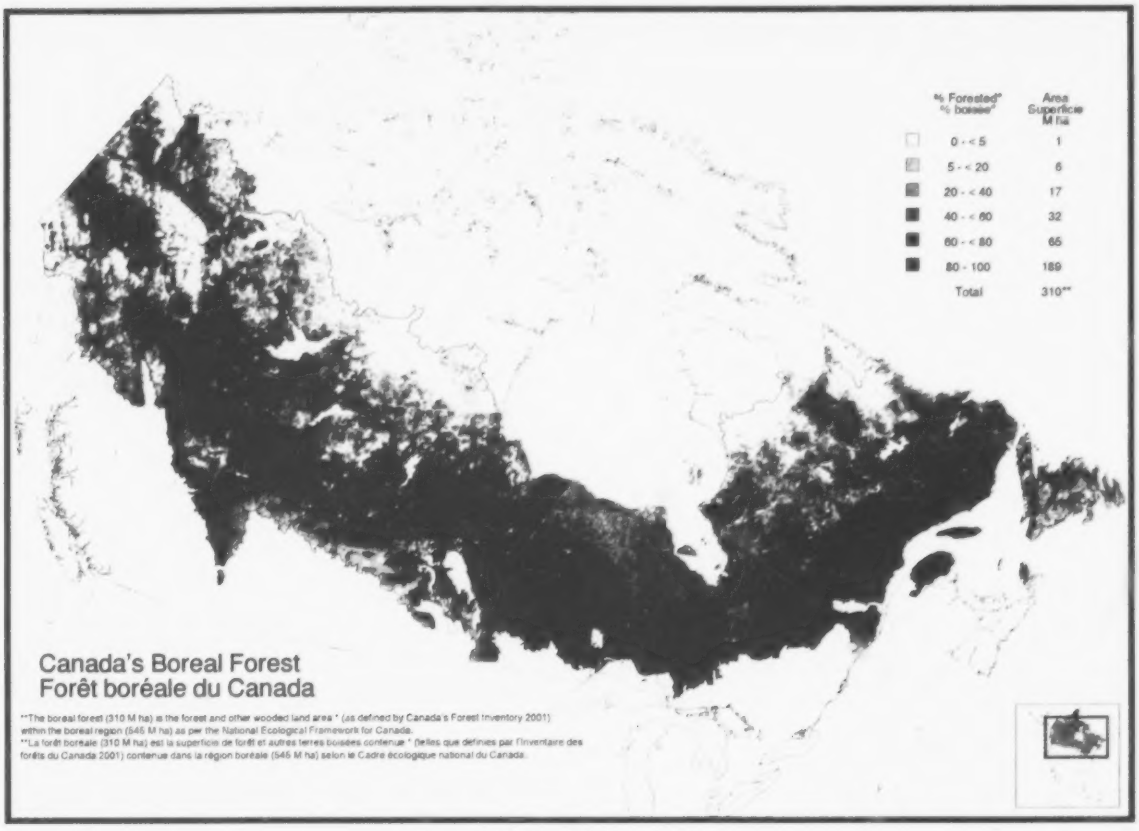

% Forested*
% boisée*
Area
Superficie
M ha
0 - < 5
1
5 - < 20
6
20 - < 40
17
40 - < 60
32
60 - < 80
65
80 - 100
189
Total
310**
Canada's Boreal Forest
Forêt boréale du Canada
**The boreal forest (310 M ha) is the forest and other wooded land area * (as defined by Canada's Forest Inventory 2001) within the boreal region (545 M ha) as per the National Ecological Framework for Canada.
**La forêt boréale (310 M ha) est la superficie de forêt et autres terres boisées contenue * (telles que définies par l'inventaire des forêts du Canada 2001) contenue dans la région boréale (545 M ha) selon le Cadre écologique national du Canada.

Figure 48. Canada's boreal region

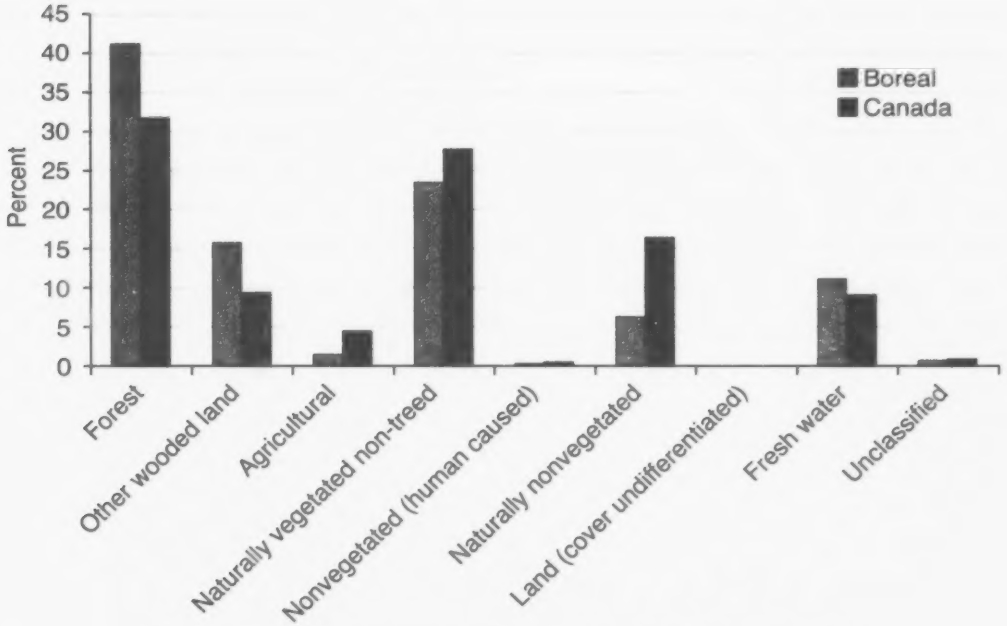


Figure 49. Area percent of land class in Canada and in the boreal region

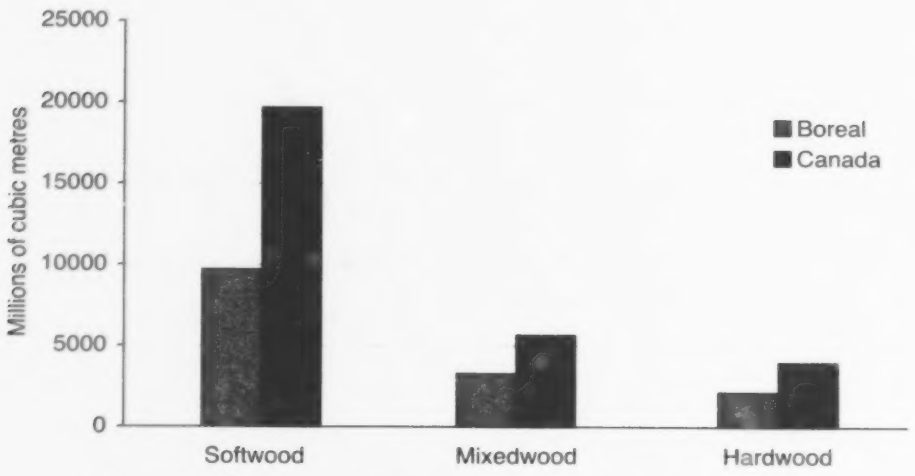


Figure 50. Total volume by forest type in the boreal region and Canada

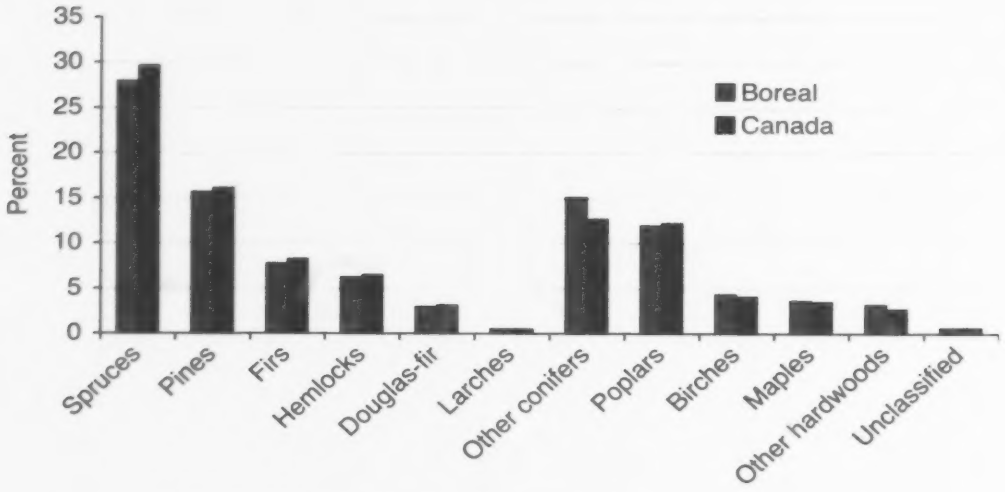


Figure 51. Volume percent by grouped leading species for the boreal region and Canada

5 Featured Analysis: Protected Areas

A question often asked, nationally and internationally, is "how much of Canada's forests are protected?" Because this information is not usually a part of provincial and territorial forest inventories, information from other provincial and territorial, as well as other federal, sources was used and integrated with CanFI2001 to describe forest resource and land cover in the protected areas.

In order to be able to report from CanFI2001 on regions other than provinces and territories, forest regions and sections, or ecozones and ecoregions, the geographic information (GIS coverage) describing the boundaries of the regions of interest must be intersected with the CanFI map sheet boundaries. This applies to protected areas as well as to any other reporting units.

Protected areas have been classified according to the International Union for the Conservation of Nature and Natural Resources (IUCN) classification system (IUCN 1994). The IUCN guidelines have been recognized internationally. The categories are defined in Table 23.

Protected area data (including GIS coverages) were used from all provinces and territories except Alberta, the Yukon and Nunavut. The data did not always include an IUCN protection class. Protected areas information from the Canadian Conservation Areas Database (CCAD; from geogratis.cgdi.gc.ca/ccea/ccea_e.html) was also used. CCAD data include GIS coverages for only a few of the protected areas in a province, but they do have IUCN classes for most protected areas. Where no provincial or territorial data were available, CCAD data were used. Where provincial data included IUCN classes for all protected areas (New Brunswick and Saskatchewan only), provincial data were the sole protected area data source used. Where CCAD data had IUCN classes and provincial data did not, the IUCN classes were used from CCAD data where protected area names were the same.

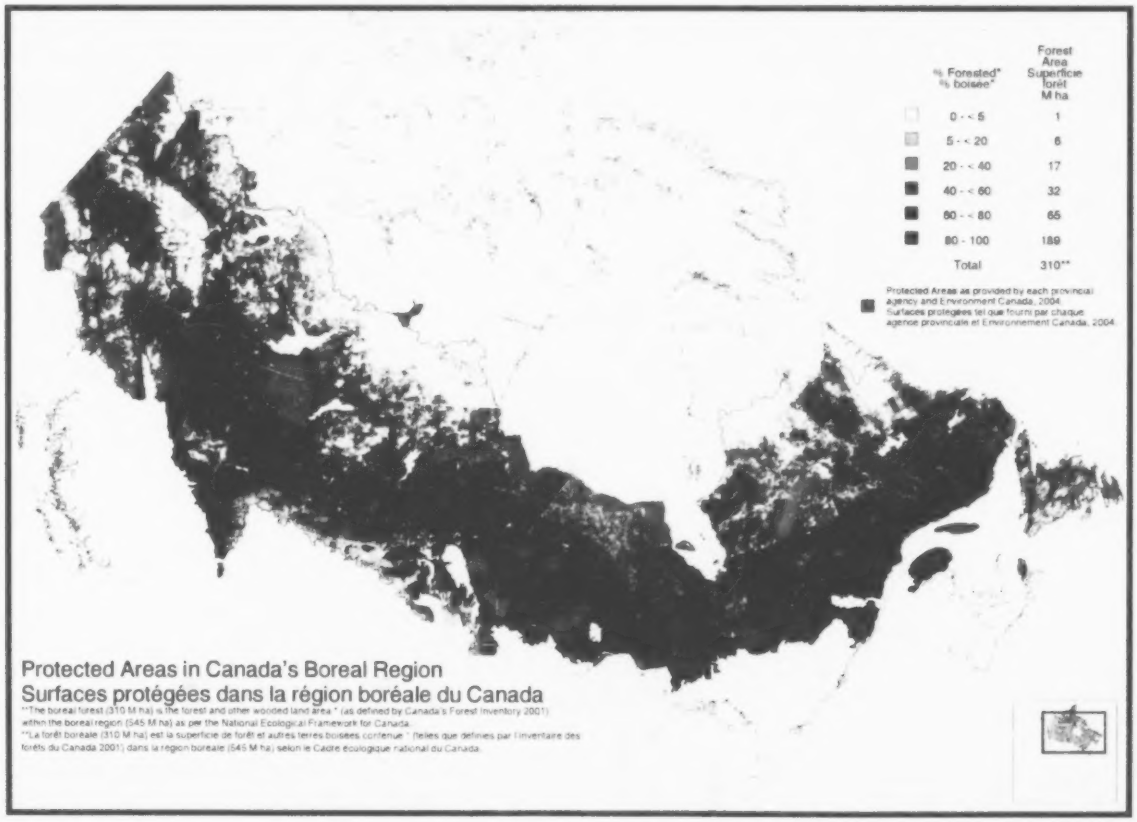

% Forested*
% boisee*
Forest Area Superficie forêt M ha
0 - < 5
1
5 - < 20
6
20 - < 40
17
40 - < 60
32
60 - < 80
65
80 - 100
189
Total
310**
Protected Areas as provided by each provincial Agency and Environment Canada, 2004
Surfaces protégées tel que fourni par chaque agence provinciale et Environnement Canada, 2004
Protected Areas in Canada's Boreal Region
Surfaces protégées dans la région boréale du Canada
**The boreal forest (310 M ha) is the forest and other wooded land area * (as defined by Canada's Forest Inventory 2001) within the boreal region (545 M ha) as per the National Ecological Framework for Canada.
**La forêt boréale (310 M ha) est la superficie de forêt et autres terres boisées contenue * (telles que définies par l'inventaire des forêts du Canada 2001) dans la région boréale (545 M ha) selon le Cadre écologique national du Canada.

Figure 52. Protected areas in Canada's boreal region

There are about 27.8 million ha of protected areas listed in the CCAD database for which there are no geographic information and no corresponding data in the provincial or territorial data sets. As these valid protected areas could not be applied to CanFI2001, summaries by protected areas do not include these 27.8 million ha.

Figure 52 shows the protected areas in Canada's boreal region; Figure 53 shows that 11% of Canada's total land mass is protected. Figure 53 includes the 27.8 million ha that could not be applied to CanFI2001; the other figures that analyze CanFI2001 data based on protection do not include the 27.8 million ha. Figure 54 shows that about 8% of Canada's forest area is protected. The land class with the highest percentage of protected area is unclassified land—unclassified because the satellite imagery available for Nahanni National Park (a large protected area) included cloud cover.

Figure 55 shows that less than 10% of the area of three ecozones (Mixedwood Plains, Prairies, and Taiga Shield) are protected, whereas between 10% and 20% of the area of each of the other ecozones is protected. The Montane Cordillera and Boreal Cordillera have the highest percentage of protected area, because of the large number of national parks in these ecozones.

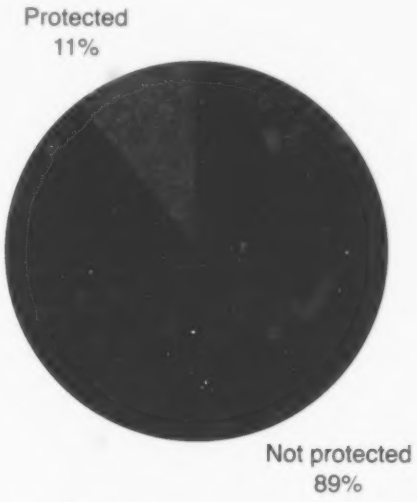


Figure 53. Protection status in Canada, including protected areas with no geographic information.

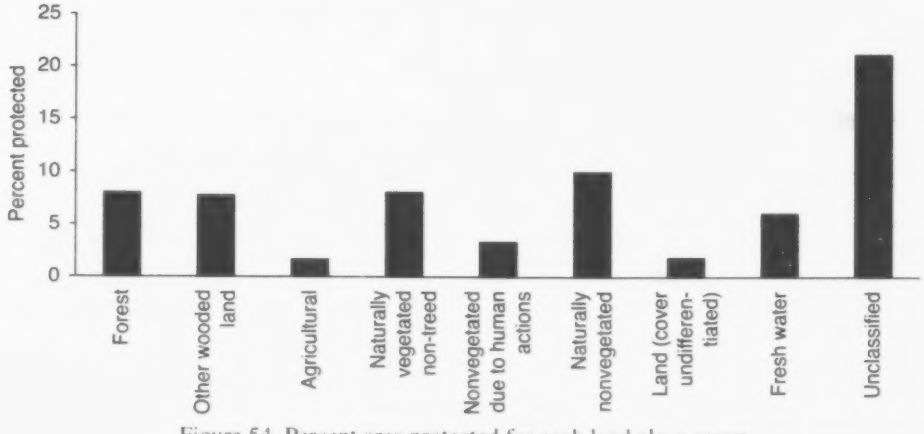


Figure 54. Percent area protected for each land class group

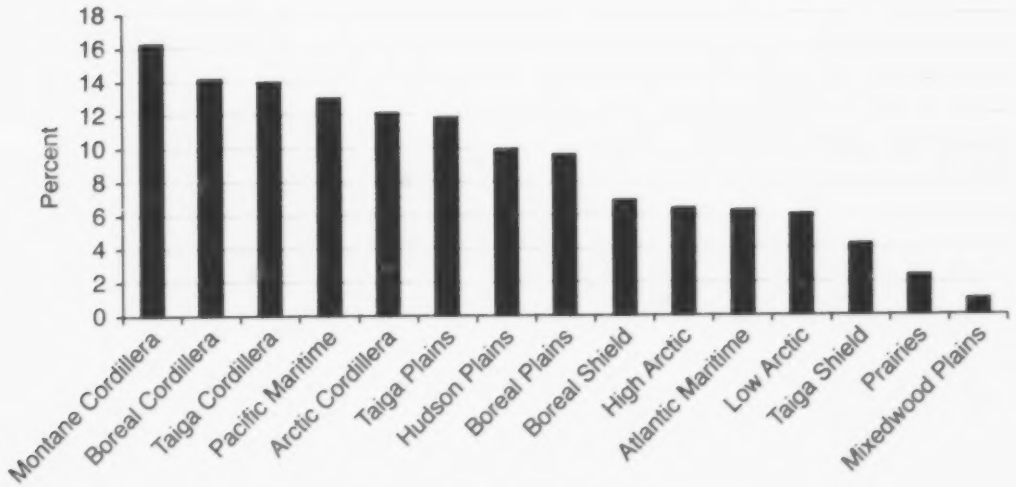


Figure 55. Percent of area protected by ecozone

6 Summary

CanFI2001 is the latest statement on Canada's Forest Inventory. Compiled electronically at roughly five-year intervals since 1981 (in 1981, 1986, 1991 and 2001), CanFI collates the most recent provincial, territorial and other forest management inventories. It provides detailed, location-specific information on the characteristics and quantity of Canada's forests that is consistent with forest management information. It provides data that supports the Criteria and Indicator processes that monitor sustainable development, policy-making, national and international inquiries (for example, the United Nations Food and Agriculture Organization's Global Forest Resources Assessment), and reports on climate change. CanFI data is also made available to other government departments, research institutions, non-governmental organizations and the public. Before 1981, the national forest inventory was compiled on the basis of questionnaires completed by provincial and territorial forest management agencies.

Some of the improvements in CanFI2001 over previous versions include:

- Information for all of Canada, not only forested areas;
- More detailed description of the land and what is on it;
- Estimates of forest biomass.

There are differences between successive CanFI reports: some differences reflect real change resulting from either a natural or human-caused change in forest condition; other differences are artifacts of change resulting from modifications in procedures, standards and definitions between successive inventories. For example, changing the definition of forest from a minimum of 20% crown closure to 10% crown closure would result in increased forest area totals. Similarly, more precise methodologies could result in changes to forest estimates.

There is a difference in the area classified as forest between 1991 and 2001. Forest area (including other wooded land) is now estimated to be 402.1 million ha, down from 417.6 million ha in 1991. This is likely due to changes in methodology that have affected estimates. For example, CanFI2001's area estimates for northern Canada are based on interpretation of coarse-resolution satellite data, which improves the ability to differentiate forest from non-forest areas relative to previous methods. Thus, areas that were previously thought to be forested are, in fact, not. Finer-resolution data available in the future will improve ability to define area of forest and could result in further changes. The difference in estimates for southern Canada is much smaller. Estimates have improved as provinces have improved their inventory methodologies; this is another factor in the difference in forest area.

CanFI2001 was designed to provide the best available information on the characteristics and quantity of Canada's forests; it was not designed to assess change over time. Comparing summaries between successive CanFI reports may be misleading without detailed background knowledge.

Canada's current national inventory is a periodic compilation of existing inventory from across the country. Although the current approach has many advantages, it lacks information on the nature and rate of changes to the resource, and does not permit projections or forecasts. Being a compilation of inventories of different dates that were collected to varying standards, the current national forest inventory, although consisting of the best available information, cannot reflect the current state of the forests and, therefore, should not be used as a satisfactory baseline for monitoring change.

To address the need to determine change over time and to support increasing demands for additional forest resource information, the Canadian Forest Inventory Committee, a sub-committee of the Canadian Council of Forest Ministers Information and Knowledge Working Group, has developed a different approach for the National Forest Inventory (NFI): a plot-based system of permanent observational units

located on a national grid. The NFI will collect accurate and timely information on the extent and state of Canada's forests to establish the baseline of where the forests are and how they are changing over time. The core NFI design, described in *Canada's National Forest Inventory – Design Overview* (CFS, 2004), is being implemented in cooperation with the provinces and territories.

7 References

Ecological Stratification Working Group. 1996. A National Ecological Framework for Canada. Agriculture and Agri-Food Canada, Research Branch, Centre for Land and Biological Resources Research and Environment Canada, State of the Environment Directorate, Ecozone Analysis Branch, Ottawa/Hull. Report and national map at 1:7 500 000 scale. 125 p. (available on-line at: sis.agr.gc.ca/cansis/publications/ecostrat/intro.html)

Food and Agriculture Organization of the United Nations (FAO). 2006. Global Forest Resources Assessment 2005 – Progress towards sustainable forest management. FAO Forestry Paper No. 147. Rome, Italy. 320 p.

Haddon, B.D. (editor) 1988. Forest inventory terms in Canada. Canadian Forest Inventory Committee, Forestry Canada, Chalk River, Canada. 3rd edition. 109 p.

International Union for the Conservation of Nature and Natural Resources (IUCN). 1994. Guidelines for Protected Areas Management Categories. Cambridge, UK. 261 pp.

Natural Resources Canada, Canadian Forest Service (CFS). 2004. Canada's National Forest Inventory – Design Overview. Version 3.2. [document on-line] Canadian Forest Service, Natural Resources Canada. Victoria, Canada. 13 p. Accessed August 30, 2004. https://nfi.nfis.org/documentation/general/Design_overview_v3.2.pdf

Natural Resources Canada, Canadian Forest Service (CFS). 2005. The State of Canada's Forests 2004-2005: The boreal forest. Headquarters, Planning, Operations and Information Branch, Ottawa. 96 p.

Rowe, J.S. 1972. Forest Regions of Canada. Ottawa, Canada. Department of the Environment, Canadian Forestry Service, Publ. No. 1300. 172 p.

Statistics Canada. 2005. Land and freshwater area by province and territory [document on-line]. Statistics Canada. Accessed 30 Aug. 2006. www40.statcan.ca/l01/cst01/phys01.htm .

8 Tables

Table 1. Range of areas for entire map sheets for the different maps used for CanFI2001

Province/territory	Map sheet type	Approximate range of map areas (ha) where maps not intersected with coastlines or other boundaries	
		Lower	Upper
Newfoundland and Labrador	1/16th of 1:50 000 NTS map	5 250	6750
	UTM	9 280	9 580
	1:50 000 NTS map	82 800	93 350
Nova Scotia	ND Ortho 1:10 000	3 000	3 135
	Digital 1:10 000	4 300	4 700
Prince Edward Island		4 312	4 412
New Brunswick	1:10 000, 7.5 km × 5.5 km	4 480	4 600
Quebec	UTM	9 410	9 780
	1/25th of 1:50 000 NTS map	23 600	28 500
	1:50 000 NTS map	91 000	99 300
Ontario	1:10 000, 5000 m × 5000 m	2 560	2 595
	UTM	9 560	9 890
	1:20 000, 10 km × 10 km	9 850	10 250
	1/4th 1:50 000 NTS map	23 200	25 200
	Township (av. 20 798 ha)	10	48 465
Manitoba	Township	8 520	10 200
	UTM	9 450	9 620
Saskatchewan	Township	9 000	9 680
	UTM	9 460	9 760
	Large	89 900	101 200
Alberta	Township	9 250	9 300
	UTM	9 700	9 850
	Indian reserves (av. 4436 ha)	2	27 322
British Columbia	1/100th 1:250 000 NTS map	11 800	16 200
Yukon	UTM	9 450	9 490
Northwest Territories	UTM	9 450	10 200
Nunavut	UTM	9 750	11 100

Table 2. Data origin and vintage (area weighted mean year)

Data origin	Area Percentage of Canada	Vintage
Satellite imagery	55.6	1995
New provincial/territorial data	26.9	1985
Data re-used from CanFI1991	11.9	1983
Old provincial/territorial data resubmitted	3.8	1975
Ecological study/other study/CFS	1.8	1998

Table 3. Area summaries by province and territory

Province/ territory	Area (million ha)						
	Land	Fresh water	Not classified	Total	Forest & other wooded land	Forest	Stocked forest
NL	35.4	4.8	0.1	40.3	20.1	10.7	7.8
NS	5.3	0.3	-	5.5	4.3	4.2	4.1
PE	0.6	0.0	-	0.6	0.3	0.3	0.3
NB	7.1	0.2	0.0	7.3	6.2	6.1	5.6
QC	133.0	18.9	-	151.9	84.6	73.4	65.4
ON	88.1	19.2	0.2	107.5	68.3	53.8	47.2
MB	54.0	9.6	0.0	63.6	36.4	19.0	16.3
SK	58.8	6.3	0.1	65.2	24.3	20.0	19.3
AB	61.4	2.2	1.8	65.4	36.4	27.7	25.7
BC	91.6	2.7	0.2	94.5	64.2	57.9	49.8
YT	46.6	0.6	1.3	48.5	22.8	7.9	4.7
NT	111.9	15.1	1.1	128.1	33.3	28.4	27.9
NU	188.4	8.5	3.8	200.6	0.9	0.8	0.8
Canada	882.1	88.3	8.7	979.1	402.1	310.1	274.9

Table 4. Coniferous, broadleaved, and total volume and biomass by province and territory

Province/ territory	Volume (million m^3)			Biomass (million t)		
	Coniferous	Broadleaved	Total	On forest land	On other vegetated land	Total
NL	525.5	36.7	562.2	810.1	280.7	1 090.8
NS	265.4	119.1	384.6	337.9	4.1	342.0
PE	15.1	16.3	31.5	27.1	0.3	27.4
NB	354.2	180.8	535.0	480.7	4.1	484.8
QC	3 213.1	1 432.0	4 645.1	4 561.5	434.9	4 996.4
ON	4 196.5	2 467.8	6 664.3	5 066.6	409.3	5 475.8
MB	459.2	275.5	734.6	747.5	392.5	1 140.0
SK	673.7	536.4	1 210.1	1 316.4	90.5	1 406.9
AB	1 597.3	938.4	2 535.7	2 401.6	71.8	2 473.4
BC	9 989.7	640.4	10 630.1	9 758.7	23.4	9 782.1
YT	491.4	62.1	553.4	484.0	154.3	638.3
NT	776.4	104.8	881.2	1 280.4	165.2	1 445.6
NU	13.7	2.0	15.7	25.3	244.9	270.2
Canada	22 571.1	6 812.5	29 383.6	27 297.8	2 275.9	29 573.7

Table 5. Area by nonvegetated land class. (The indented items are hierarchical: for example, railway is anthropogenically nonvegetated right-of-way.)

Land Classification		Area (1000 ha)
Nonvegetated due to human actions		
Anthropogenically nonvegetated		1 479.70
Cleared land		1 547.17
Gravel pit/quarry/mine site/oil field/peat extraction		75.12
Urban/cities/residential		981.20
Right-of-way (type undifferentiated)		606.97
Road		151.96
Railway		10.36
Transmission line		75.01
Pipeline		0.21
Airstrip		3.26
Harvested or burned		0.02
	Total	4 931.00
Naturally nonvegetated		
Nonvegetated land		81.90
Rock		11 889.09
Sand		44.87
Barren soil		47 446.57
Recent/unproductive burn		18 239.69
Mud/salt flat		216.69
Flooded land		247.62
Gravel bar/stream channel		22.13
Clay bank/cut bank		38.91
Alpine		25 873.94
Ice/icefield		56 520.37
	Total	160 621.79
Land (cover undifferentiated)		
Land (cover undifferentiated)		48.98
	Total	48.98
Fresh water		
Water - undifferentiated		66 437.26
Lake/pond/reservoir		3 730.55
Large lake (>4000 km^2)		13 641.98
St. Lawrence River		3 613.32
River/stream/flowage		860.89
	Total	88 284.00
No information		
No information		8 692.26
	Total	8 692.26
Total all nonvegetated land classes		262 578.03

Table 6. Area, volume, and biomass by vegetated land class. (The indented items are hierarchical: for example, marsh is naturally vegetated non-treed wetland.)

Land Classification	Area (1000 ha)	Volume (million m^3)	Biomass (million t)
Forest			
Forest	310 133.82	29 383.41	27 297.80
Total	310 133.82	29 383.41	27 297.80
Other wooded land			
Vegetated treed (type undifferentiated)	655.48	-	5.94
Vegetated treed wetland	37 224.09	-	623.78
Treed muskeg/treed bog	35 190.58	-	708.42
Forested wetland/swamp	1 775.60	-	9.90
Vegetated treed scattered	5 410.65	-	25.17
Treed rock	1 472.53	-	0.92
Small island/shelter belt	45.81	-	0.02
Alpine forest	4 380.99	-	5.51
Wooded prairie/aspen parkland	0.13	-	0.00
Wind swept/stunted	5 621.20	-	0.92
Vegetated treed - recreation	173.85	-	14.18
Total	91 950.91	-	1 394.77
Agricultural			
Anthropogenically vegetated non-treed	3 205.19	-	-
Agriculture/crops	37 692.62	-	-
Pasture	2 603.68	-	-
Total	43 501.49	-	-
Naturally vegetated non-treed			
Vegetated (origin & type undifferentiated)	18.39	-	-
Naturally vegetated non-treed	21 667.35	-	97.37
Wetland	2 086.19	-	11.48
Muskeg/bog/fen	16 618.13	-	67.30
Marsh	1 174.81	-	7.51
Meadow	1 248.61	-	6.00
Shrub	39 260.18	-	70.26
Supertidal marsh	62.10	-	0.38
Upland shrub	1 010.21	-	1.86
Alders	485.28	-	0.89
Brush/avalanche scrub/riparian banks	39 099.72	-	71.94
Other than wetland or upland shrub	5 398.14	-	20.15
Grassland/meadow	24 946.42	-	112.31
Open range	821.55	-	4.67
Mosses	15 989.87	-	54.08
Tundra, shrub & lichen	76 547.44	-	264.02
Tundra heath	24 473.97	-	90.91
Grasslands on calcareous soils	4.80	-	0.02
Total	270 913.16	-	881.17
Total all vegetated land	716 499.38	29 383.41	29 573.74

Table 7. Area (1000 ha) by land class groups and by province and territory

Province/ territory	Land class									
	Forest	Other wooded land	Agricultural	Naturally vegetated non-treed	Nonvegetated due to human actions	Naturally nonvegetated	Land (cover undifferentiated)	Fresh water	Unclassified	Total
NL	10 730	9 337	14	14 038	66	1 193	-	4 801	120	40 299
NS	4 240	107	240	344	203	144	-	254	-	5 531
PE	265	8	227	18	44	3	-	11	-	576
NB	6 091	116	311	351	252	8	-	180	4	7 312
QC	73 360	11 215	817	46 744	47	786	-	18 915	-	151 885
ON	53 758	14 536	4 647	13 909	1 099	161	-	19 178	193	107 482
MB	18 968	17 386	5 925	7 974	695	3 048	-	9 595	33	63 623
SK	20 043	4 215	19 280	10 871	291	4 116	-	6 252	123	65 190
AB	27 718	8 670	11 954	10 504	732	1 822	-	2 204	1 832	65 436
BC	57 910	6 337	83	2 714	1 491	23 110	-	2 708	193	94 545
YT	7 884	14 906	3	19 320	12	4 424	49	596	1 293	48 486
NT	28 352	4 994	-	49 249	-	29 259	-	15 131	1 130	128 115
NU	815	125	-	94 877	-	92 549	-	8 459	3 772	200 597
Canada	301 134	91 951	43 501	270 913	4 931	160 622	49	88 284	8 692	979 077

Table 8. Area of forest and other wooded land by ownership and province and territory (1000 ha)

Province/ Territory	Crown Land		Private	Unclassified	Total
	Federal	Provincial			
NL	96	19 817	155	-	20 067
NS	117	1 274	2 956	0	4 347
PE	1	23	247	-	272
NB	133	2 984	3 089	0	6 207
QC	398	74 906	9 264	7	84 575
ON	723	62 085	5 486	-	68 294
MB	650	34 567	1 138	-	36 354
SK	954	21 828	1 476	-	24 258
AB	2 772	32 532	1 084	1	36 388
BC	651	61 822	1 775	-	64 247
YT	22 789	-	-	-	22 789
NT	33 346	-	-	-	33 346
NU	939	-	-	-	939
Canada	63 570	311 838	26 668	8	402 085

Table 9. Area of forest and other wooded land by status and province and territory (1000 ha)

Province/ Territory	Reserved	Nonreserved			Unclassified	Total
		Assigned	Retained	Other		
NL	106	4 344	15 460	158	-	20 067
NS	335	541	511	2 960	0	4 347
PE	1	0	24	247	-	272
NB	33	2 961	124	3 089	0	6 207
QC	729	-	74 575	9 264	7	115 230
ON	4 481	30 654	27 673	5 486	-	46 407
MB	2 199	8 767	23 648	1 740	-	38 341
SK	693	10 754	11 342	1 469	-	33 278
AB	3 908	19 774	10 188	1 064	1 454	21 441
BC	4 777	4 827	52 868	1 775	-	59 420
YT	214	-	22 575	-	-	22 789
NT	972	-	32 374	-	-	33 346
NU	-	-	939	-	-	939
Canada	18 449	82 622	272 300	27 252	1 461	402 085

Table 10. Area of forest by status and province and territory (1000 ha)

Province/ Territory	Reserved	Nonreserved			Unclassified	Total
		Assigned	Retained	Other		
NL	72	4 172	6 354	133	-	10 730
NS	322	519	491	2 908	0	4 240
PE	1	0	23	241	-	265
NB	32	2 886	124	3 050	0	6 091
QC	693	-	64 854	7 806	7	73 360
ON	3 543	28 271	16 670	5 274	-	53 758
MB	1 345	5 207	10 775	1 641	-	18 968
SK	647	10 452	7 507	1 437	-	20 043
AB	3 443	14 670	7 420	1 047	1 137	27 718
BC	4 124	4 611	47 459	1 716	-	57 910
YT	214	-	7 669	-	-	7 884
NT	861	-	27 492	-	-	28 352
NU	-	-	815	-	-	815
Canada	15 298	70 788	197 651	25 252	1 145	310 134

Table 11. Area, average volume, total volume, average biomass, and total biomass by site index.

Site index (m)	Area (1000 ha)	Average volume (m^3/ha)	Total volume (million m^3)	Average biomass (t/ha)	Total biomass (million t)
7.5	74 028	78	5 238	73	5 373
12.5	58 985	147	7 957	119	6 991
17.5	50 531	165	7 516	118	5 977
22.5	5 515	249	1 067	161	890
27.5	882	302	258	248	219
32.5	174	427	73	336	58
37.5	60	552	33	420	25
42.5	6	525	3	404	2
47.5	2	778	1	550	1
52.5	0	828	0	512	0
57.5	0	414	0	337	0
Unclassified	119 951	71	7 235	65	7 760
Total/average	310 134	107	29 383	88	27 298

Table 12. Area, volume, and biomass on forest land by stocking class

Stocking class	Area of forest land (1000 ha)	Total volume (1000 m^3)	Average volume (m^3/ha)	Total biomass (1000 t)	Average biomass (t/ha)
Unclassified	5.61	0	0	24.67	4.40
Nonstocked	5 576.26	0	0	20 742.94	3.72
Stocking unknown	11 185.48	0	0	36 120.75	3.23
Disturbed	301.70	0	0	7 046.95	23.36
Burn	11 290.01	0	0	54 005.39	4.78
Harvest	5 776.27	0	0	3 181.93	0.55
Windthrow	50.42	0	0	32.48	0.64
Insect/disease	271.52	0	0	131.37	0.48
Other disturbance	456.58	0	0	231.52	0.51
Abandoned field	150.78	0	0	73.28	0.49
Not measured	151.25	0	0	25.29	0.17
Experimental areas	0.18	0	0	0.09	0.49
Stocked, extent unknown	10 586.93	501 903.21	49.40	727 746.80	68.74
Regenerating	2 208.51	1 071.02	0.58	49 897.05	22.59
Partly stocked	101 318.14	5 615 967.67	55.63	6 277 368.97	61.96
Fully stocked	160 804.18	23 264 664.60	148.03	20 121 168.26	125.13
Total forest	310 133.82	29 383 606.50	108.78	27 297 797.73	88.02

Table 13. Area of stocked forest land, total volume, average volume, total biomass, and average biomass in Canada by forest type

Forest type	Area (1000 ha)	Total volume (million m^3)	Average volume (m^3/ha)	Total biomass (million t)	Average biomass (t/ha)
Softwood	179 891.76	19 689.26	109.45	18 365.82	102.09
Mixedwood	60 624.56	5 647.63	93.16	5 202.36	85.81
Hardwood	32 373.89	3 996.47	123.45	3 474.92	107.34
Unclassified	2 028.55	50.15	24.72	133.08	65.61
Total	274 918.76	29 383.41	106.88	27 176.18	98.85

Table 14. Area (1000 ha) of stocked forest by grouped leading species and forest type

First species	Softwood	Mixedwood	Hardwood	Unclassified	Total
Spruces	65 898.48	7 695.53	82.70	-	73 676.71
Pines	30 468.12	5 271.76	50.32	-	35 790.20
Firs	13 643.22	3 399.12	178.60	-	17 220.94
Hemlocks	4 351.58	333.76	17.18	-	4 702.52
Douglas-fir	3 958.54	333.14	-	-	4 291.68
Larches	1 161.07	76.25	10.06	-	1 247.39
Other conifers	60 033.56	20 024.62	18.69	-	80 076.87
Poplars	90.83	11 068.18	17 687.83	-	28 846.84
Birches	120.73	6 565.28	3 912.64	-	10 598.66
Maples	35.35	1 155.42	5 236.19	-	6 426.95
Other hardwoods	50.27	2 510.63	5 178.97	-	7 739.87
Unclassified	79.00	2 190.88	0.70	2 028.55	4 299.13
Total	179 890.76	60 624.56	32 373.89	2 028.55	274 917.76

Table 15. Total volume by species, grouped by genus

Species groups	Volume (m^3)
Spruces	10 097 985 692
Pines	4 927 460 195
Poplar/aspen	4 045 640 996
Firs	3 195 507 580
Hemlocks	1 862 210 958
Birches	1 342 175 704
Cedars	994 868 433
Douglas-fir	943 413 227
Maples	726 423 834
Tamarack/larch	320 588 142
Yellow cypress	181 880 863
Upland hardwoods	173 609 438
Lowland hardwoods	144 336 301
Alders	96 637 916
Unspecified broadleaves	81 314 557
Intolerant hardwoods	62 773 159
Tolerant hardwoods	38 133 873
Other conifers	36 994 971
Beech	35 737 391
Other broadleaves	21 518 581
Oaks	20 281 049
Ashes	11 141 450
Unspecified conifers	10 011 151
Basswood	8 401 769
Elms	1 890 720
Ironwood	1 807 456
Cherry	515 785
Butternut	72 629
Willow	58 256
Hickories	13 157
Total all species	29 383 405 233

Table 16. Total biomass (million t) on forest land by biomass component and leading species, grouped by genus

Leading species	Live					Dead
	Stemwood	Stem bark	Branches	Foliage	Total	
Spruces	5 058.54	757.57	971.24	730.24	7 517.90	629.18
Other conifers	2 731.82	420.80	441.04	449.02	4 042.78	466.82
Pines	2 862.55	353.66	418.84	300.92	3 935.96	283.58
Poplar/aspen	2 093.92	416.44	332.75	144.65	2 987.78	307.51
Firs	1 376.20	214.67	359.47	237.07	2 188.70	237.63
Hemlocks	1 085.98	150.76	204.97	118.23	1 559.94	210.27
Birches	704.94	113.76	156.96	67.10	1 042.79	70.21
Douglas-fir	616.27	96.31	139.58	75.77	927.94	80.10
Maples	607.84	84.54	174.82	34.24	901.44	23.96
Cedars	574.66	77.87	113.34	62.43	828.30	108.70
Missing value	207.28	35.37	39.62	20.76	303.03	19.19
Unspecified broadleaves	185.44	37.69	32.08	14.73	269.95	34.28
Intolerant hardwoods	134.06	27.06	31.01	10.92	203.05	12.24
Larches	100.96	13.67	17.53	11.32	143.49	12.37
Tolerant hardwoods	68.03	9.91	21.31	5.40	104.65	5.90
Yellow cypress	70.42	7.30	9.18	5.50	92.40	17.74
Oaks	45.92	6.72	12.72	2.70	68.06	2.06
Alders	24.82	3.74	4.95	2.47	35.99	4.27
Ashes	17.64	2.66	4.33	1.20	25.84	0.91
Beech	8.54	1.14	2.50	0.47	12.65	0.34
Basswood	2.23	0.32	0.61	0.12	3.29	0.06
Elms	0.93	0.13	0.22	0.05	1.33	0.03
Cherry	0.56	0.08	0.15	0.03	0.82	0.02
Other broadleaves	0.45	0.06	0.13	0.03	0.67	0.02
Not stocked forest land	-	-	-	-	99.06	-
Total	18 580.00	2 832.24	3 489.37	2 295.39	27 297.80	2 527.37

Table 17. Area, volume, and biomass summaries by forest region

	Area (million ha)						
Forest region	Land	Fresh water	Not classified	Total	Forest & other wooded land	Forest	Stocked forest
Boreal - predominantly forest	254.7	32.8	1.6	289.1	208.1	160.9	138.4
Boreal - forest & grassland	20.3	0.9	0.1	21.4	2.1	2.1	2.0
Boreal - forest & barren	186.1	27.6	0.9	214.6	94.9	61.7	55.9
Subalpine	24.2	0.6	0.2	25.0	17.0	15.5	14.4
Montane	14.2	0.7	0.0	14.9	12.5	12.1	11.2
Coast	11.3	0.4	0.1	11.9	8.7	8.0	7.0
Columbia	5.1	0.3	0.0	5.3	4.1	3.9	3.6
Deciduous	2.6	2.3	0.0	4.9	0.4	0.4	0.3
Great Lakes - St. Lawrence	35.0	10.3	0.1	45.4	26.8	25.6	23.7
Acadian	11.7	0.4	0.0	12.1	9.6	9.4	8.8
Grassland	29.0	0.5	0.0	29.6	1.5	1.5	1.4
Tundra	287.8	11.5	5.5	304.8	16.2	9.1	8.1
Canada	882.1	88.3	8.7	979.1	402.1	310.1	274.9

	Volume (million m^3)			Biomass (million t)		
Forest region	Coniferous	Broadleaved	Total	On forest land	On other vegetated land	Total
Boreal - predominantly forest	9 820.7	3 803.0	13 623.8	12 306.79	720.77	13 027.55
Boreal - forest & grassland	23.3	113.6	136.9	164.34	25.83	190.18
Boreal - forest & barren	1 407.8	190.7	1 598.5	2 497.58	930.84	3 428.42
Subalpine	2 990.8	87.2	3 077.9	2 706.40	5.46	2 711.86
Montane	1 910.2	97.7	2 007.9	1 880.27	4.35	1 884.63
Coast	2 535.3	111.4	2 646.7	2 276.56	4.16	2 280.72
Columbia	751.3	25.0	776.4	718.17	0.45	718.61
Deciduous	8.2	31.9	40.1	34.50	0.58	35.09
Great Lakes - St. Lawrence	1 363.9	2 031.1	3 395.0	2 713.54	46.81	2 760.35
Acadian	556.2	270.9	827.1	738.07	8.33	746.40
Grassland	140.5	23.4	163.9	198.76	67.80	266.55
Tundra	1 062.8	26.5	1 089.3	1 062.81	460.57	1 523.38
Canada	22 570.9	6 812.5	29 383.4	27 297.80	2 275.94	29 573.74

Table 18. Area, volume, and biomass by terrestrial ecozone

	Area (million ha)						
Terrestrial ecozones	Land	Fresh water	Not classified	Total	Forest & other wooded land	Forest	Stocked forest
Arctic Cordillera	23.7	0.1	0.3	24.2	0.0	0.0	0.0
Northern Arctic	139.9	3.6	2.5	146.0	0.2	0.1	0.1
Southern Arctic	72.8	6.0	1.3	80.1	2.4	1.3	1.3
Taiga Plains	54.9	7.6	0.1	62.6	35.8	28.3	25.0
Taiga Shield	113.2	19.8	0.7	133.8	48.4	37.9	33.8
Boreal Shield	164.4	30.4	0.1	194.9	144.5	119.0	104.4
Atlantic Maritime	19.5	1.4	0.0	20.9	16.5	16.2	15.0
Mixedwood Plains	10.5	6.0	0.1	16.6	3.3	3.1	2.7
Boreal Plains	64.8	6.9	1.6	73.3	47.9	35.9	32.4
Prairies	45.2	1.2	0.1	46.4	1.9	1.9	1.9
Taiga Cordillera	26.2	0.0	0.0	26.2	7.7	1.1	0.9
Boreal Cordillera	45.3	1.0	0.9	47.1	24.1	14.6	10.6
Pacific Maritime	19.7	0.5	0.6	20.9	12.1	10.8	9.6
Montane Cordillera	46.9	1.7	0.2	48.8	35.6	33.4	31.1
Hudson Plains	35.2	1.9	0.1	37.2	21.6	6.3	6.1
Canada	882.1	88.3	8.7	979.1	402.1	310.1	274.9

	Volume (million m^3)			Biomass (million t)		
Terrestrial ecozones	Coniferous	Broadleaved	Total	On forest land	On other vegetated land	Total
Arctic Cordillera	0.2	0.0	0.2	0.32	13.25	13.57
Northern Arctic	3.5	0.0	3.5	5.10	158.47	163.57
Southern Arctic	19.0	1.9	20.8	44.29	200.48	244.77
Taiga Plains	1 050.6	314.8	1 365.4	1 645.48	65.03	1 710.51
Taiga Shield	624.1	73.0	697.1	1 381.44	403.10	1 784.54
Boreal Shield	7 321.2	3 550.8	10 872.0	9 334.63	652.06	9 986.70
Atlantic Maritime	908.1	537.7	1 445.8	1 299.67	14.92	1 314.59
Mixedwood Plains	108.7	230.0	338.7	286.47	18.96	305.43
Boreal Plains	1 914.7	1 475.7	3 390.5	3 005.10	49.31	3 054.41
Prairies	13.4	107.4	120.8	142.46	91.80	234.26
Taiga Cordillera	38.9	3.4	42.3	56.54	86.71	143.25
Boreal Cordillera	1 111.6	101.7	1 213.3	1 211.33	71.30	1 282.63
Pacific Maritime	3 464.0	135.0	3 599.0	3 114.88	7.37	3 122.25
Montane Cordillera	5 611.1	206.3	5 817.4	5 337.60	11.44	5 349.04
Hudson Plains	381.7	74.9	456.6	432.50	431.71	864.21
Canada	22 570.9	6 812.5	29 383.4	27 297.80	2 275.94	29 573.74

Table 19. Ecozones, area, and percent, in Canada's boreal region

Terrestrial ecozone	Total area (million ha)	Boreal Region	
		Area (million ha)	Percent of ecozone
Arctic Cordillera	24.16	-	0.00
Northern Arctic	146.03	-	0.00
Southern Arctic	80.10	-	0.00
Taiga Plains	62.62	62.62	100.00
Taiga Shield	133.78	133.77	99.99
Boreal Shield	194.91	162.70	83.48
Atlantic Maritime	20.93	2.63	12.55
Mixedwood Plains	16.55	-	0.00
Boreal Plains	73.34	73.34	100.00
Prairies	46.45	-	0.00
Taiga Cordillera	26.21	26.20	99.96
Boreal Cordillera	47.14	46.17	97.93
Pacific Maritime	20.85	-	0.00
Montane Cordillera	48.82	-	0.00
Hudson Plains	37.19	37.19	100.00
Canada	979.08	544.62	55.63

Table 20. Area by nonvegetated land classes in Canada's boreal region. The indented items are hierarchical, as explained in Table 5

Land Classification		Area (1000 ha)
Nonvegetated due to human actions		
Anthropogenically nonvegetated		237.17
Cleared land		889.02
Gravel pit/quarry/mine site/oil field/peat extraction		30.83
Urban/cities/residential		195.71
Right-of-way (type undifferentiated)		334.43
Road		4.10
Railway		0.00
Transmission line		29.87
Pipeline		-
Airstrip		1.03
Harvested or burned		0.01
	Total	1 722.17
Naturally nonvegetated		
Nonvegetated land		65.62
Rock		875.41
Sand		29.15
Barren soil		4 003.88
Recent/unproductive burn		15 812.79
Mud/salt flat		70.56
Flooded land		247.41
Gravel bar/stream channel		14.62
Clay bank/cut bank		27.13
Alpine		12 226.31
Ice/icefield		725.05
	Total	34 097.93
Land (cover undifferentiated)		
Land (cover undifferentiated)		48.87
	Total	48.87
Fresh water		
Water - undifferentiated		50 834.96
Lake/pond/reservoir		1 915.27
Large lake (>4000 km^2)		6 718.20
St. Lawrence River		204.86
River/stream/flowage		455.08
	Total	60 128.35
No information		
No information		3 506.91
	Total	3 506.91
Total all nonvegetated land classes		544 616.81

Table 21. Area, volume, and biomass by vegetated land class in Canada's boreal region. The indented items are hierarchical, as explained in Table 6.

Land Classification		Area (1000 ha)	Volume (million m^3)	Biomass (million t)
Forest				
Forest		223 963.03	15 192.17	14 858.05
	Total	223 963.03	15 192.17	14 858.05
Other wooded land				
Vegetated treed (type undifferentiated)		652.44	-	5.92
Vegetated treed wetland		36 593.53	-	609.28
Treed muskeg/treed bog		34 745.18	-	697.83
Forested wetland/swamp		958.37	-	4.52
Vegetated treed scattered		4 143.20	-	4.80
Treed rock		1 090.41	-	0.55
Small island/shelter belt		31.01	-	0.02
Alpine forest		1 971.73	-	0.31
Wooded prairie/aspen parkland		-	-	-
Wind swept/stunted		5 456.62	-	0.87
Vegetated treed - recreation		53.02	-	2.59
	Total	85 695.52	-	1326.69
Agricultural				
Anthropogenically vegetated non-treed		111.69	-	-
Agriculture/crops		6 920.00	-	-
Pasture		974.12	-	-
	Total	8 005.81	-	-
Naturally vegetated non-treed				
Vegetated (origin & type undifferentiated)		18.39	-	-
Naturally vegetated non-treed		19 195.86	-	86.27
Wetland		1 360.82	-	7.01
Muskeg/bog/fen		15 807.99	-	63.56
Marsh		440.95	-	2.37
Meadow		861.60	-	3.44
Shrub		6 738.59	-	19.05
Supertidal marsh		62.10	-	0.38
Upland shrub		236.93	-	0.44
Alders		223.98	-	0.41
Brush/avalanche scrub/riparian banks		21 465.36	-	39.50
Other than wetland or upland shrub		5 384.79	-	20.10
Grassland/meadow		3 794.07	-	9.94
Open range		181.66	-	0.68
Mosses		11 768.49	-	38.31
Tundra, shrub & lichen		34 016.71	-	101.81
Tundra heath		5 889.92	-	16.54
Grasslands on calcareous soils		-	-	-
	Total	127 448.21	-	409.79
Total all vegetated land		445 112.57	15 192.17	16 594.53

Table 22. Total volume (million m^3) by forest type for the boreal region and Canada.

	Softwood	Mixedwood	Hardwood	Unclassified	Total
Boreal	9 718	3 293	2 154	27	15 192
Canada	19 689	5 648	3 996	50	29 383

Table 23. IUCN protected area categories and definitions

Category	Name	Definition
Ia	**Strict Nature Reserve:** protected area managed mainly for science	Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring
Ib	**Wilderness Area:** protected area managed mainly for wilderness protection	Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition
II	**National Park:** protected area managed mainly for ecosystem protection and recreation	Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible
III	**Natural Monument:** protected area managed mainly for conservation of specific natural features	Area containing one, or more, specific natural or natural/ cultural feature, which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance
IV	**Habitat/Species Management Area:** protected area managed mainly for conservation through management intervention	Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species
V	**Protected Landscape/Seascape:** protected area managed mainly for landscape/seascape conservation and recreation	Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area
VI	**Managed Resource Protected Area:** protected area managed mainly for the sustainable use of natural ecosystems	Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs

Appendix I. Summary Tables

Table I-1. Area (1000 ha) of inventory source by year of data collection class

Province	Phase	Description	1996 to 2003	1991 to 1995	1986 to 1990	1981 to 1985	1940 to 1980	Missing	Total
NL	3	CanFI91–Island Global	-	-	-	-	2 698	258	2 956
	11	CanFI91–Island Management	-	-	-	0	39	-	39
	12	CanFI91–New Island Management	-	-	55	594	847	-	1 496
	13	New provincial data	-	1 362	2 435	1 901	892	-	6 589
	14	CFS 2003–land class -8	1	-	-	-	-	-	1
	102	CanFI91–Labrador Management	-	-	-	-	13	-	13
	104	CanFI91–Labrador Intensive	-	-	-	-	4 662	-	4 662
	105	CanFI91–Labrador Extensive	-	-	-	-	16 410	-	16 410
	114	New provincial data	-	946	2 062	-	-	-	3 008
	115	AVHRR	-	5 126	-	-	-	-	5 126
		Total	1	7 434	4 552	2 494	25 560	258	40 299
NS	204	New provincial data	-	3 312	1 414	800	-	-	5 525
	205	Sable Island	-	6	-	-	-	-	6
		Total	-	3 318	1 414	800	-	-	5 531
PE	301	New provincial data	-	-	576	-	-	-	576
		Total	-	-	576	-	-	-	576
NB	401	New provincial data	1 175	2 123	4	3 986	-	-	7 289
	402	Kouchibouguac National Park	-	-	-	-	19	-	19
	403	Irving land (map 3523)	-	-	-	4	-	-	4
		Total	1 175	2 123	4	3 990	19	-	7 312
QC	501	AVHRR	72 241	-	-	-	-	-	72 241
	503	CanFI91–1st Decennial Inventory	-	-	-	-	148	-	148
	505	CanFI91–2nd Decennial Inventory	-	3 741	46 530	10 228	629	-	61 128
	506	New data–3rd Decennial Inventory	8 153	9 780	-	-	-	435	18 368
		Total	80 394	13 521	46 530	10 228	777	435	151 885
ON	601	Landsat North	37 828	-	-	-	-	-	37 828
	602	New provincial data–FRI	12 548	12 051	6 768	8 537	11 626	-	51 529
	604	Landsat South	9 182	-	-	-	-	-	9 182
	611	CFS 2003–Great Lakes + other	8 943	-	-	-	-	-	8 943
		Total	68 500	12 051	6 768	8 537	11 626	-	107 482
MB	701	AVHRR	21 571	-	-	-	-	-	21 571
	702	New provincial data	34	5 751	5 623	14 398	16 246	-	42 052
		Total	21 605	5 751	5 623	14 398	16 246	-	63 623
SK	801	SPOT–VGT	-	19 883	-	-	-	-	19 883
	802	Township inventory	-	-	-	225	2 754	-	2 979
	803	UTM inventory	78	1 056	3 248	4 466	2 760	1 699	13 308
	804	South Digital Land Classification	-	29 020	-	-	-	-	29 020
		Total	78	49 959	3 248	4 691	5 514	1 699	65 190
AB	901	CanFI91–Northern Reconn. Peace R.	-	4	-	-	-	-	4
	902	CanFI91–from CanFI86	-	-	-	9	29	-	39
	903	CanFI91–from CanFI81	-	-	-	-	2	-	2
	904	Alberta Phase 3 data	-	-	104	3 747	28 522	-	32 373
	905	CanFI91–Phase 3 + AVI	-	-	3	-	-	-	3
	906	CanFI91–AVI	-	-	4	-	-	-	4
	907	Alberta Ground Cover Classification	8 585	1 624	-	-	-	-	10 209
	908	Wood Buffalo National Park	-	3 397	-	-	-	-	3 397

Table I-1. continued

Province	Phase	Description	1996 to 2003	1991 to 1995	1986 to 1990	1981 to 1985	1940 to 1980	Missing	Total
	909	Native Prairie Baseline Data (NPBD)	-	9 256	-	-	-	-	9 256
	910	Prairie Farm Rehab. Admin. - east	-	7 942	-	-	-	-	7 942
	911	Prairie Farm Rehab. Admin. - Peace R.	-	55	-	-	-	-	55
	912	New Alberta Vegetation Inventory (AVI)	310	-	-	-	-	-	310
	913	SPOT–VGT	-	1 843	-	-	-	-	1 843
		Total	8 895	24 120	112	3 756	28 553	-	65 436
BC	1011	Timber Supply Area	25	13 766	19 506	2 181	48 413	-	83 891
	1012	Parks	0	8	5	0	177	-	191
	1013	Tree Farm Licences	733	1 358	1 433	243	1 068	-	4 836
	1014	Gwaii Hanaas National Park	-	-	143	-	-	-	143
	1015	SPOT–VGT	-	5 186	-	-	-	-	5 186
	1016	AVHRR	-	298	-	-	-	-	298
		Total	759	20 617	21 087	2 425	49 658	-	94 545
YT	1101	AVHRR	3 640	-	-	-	-	-	3 640
	1102	New territorial data	-	3 480	10 531	-	-	1 726	15 737
	1103	CanFI91–from CanFI86	-	-	-	6 848	1	-	6 850
	1104	CanFI91–from CanFI81	-	-	-	22 045	214	-	22 259
	1105	CanFI91	-	-	0	-	-	-	0
		Total	3 640	3 480	10 532	28 893	216	1 726	48 486
NT	1201	AVHRR	12 666	-	-	-	-	-	12 666
	1202	SPOT–VGT	-	115 449	-	-	-	-	115 449
		Total	12 666	115 449	-	-	-	-	128 115
NU	1301	AVHRR	46 472	-	-	-	-	-	46 472
	1302	SPOT–VGT	-	154 125	-	-	-	-	154 125
		Total	46 472	154 125	-	-	-	-	200 597
Canada		Total area	244 187	411 947	100 446	80 212	138 168	4 118	979 077

Table I-2. Size of database

Province/ territory	Number of summary units	Number of records	Total area (ha)	Records per summary unit	Hectares per summary unit
NL	3 724	235 938	40 298 983.20	63	10 821.42
NS	1 975	1 318 919	5 531 048.89	668	2 800.53
PE	212	199 341	575 527.30	940	2 714.75
NB	1 883	2 601 420	7 312 368.13	1382	3 883.36
QC	10 770	523 507	151 885 264.00	49	14 102.62
ON	11 483	2 818 518	107 481 803.00	245	9 360.08
MB	6 982	397 004	63 622 906.76	57	9 112.42
SK	4 431	1 766 449	65 190 000.00	399	14 712.25
AB	7 345	605 571	65 436 443.00	82	8 908.98
BC	7 005	3 757 668	94 545 089.50	536	13 496.80
YT	5 161	56 830	48 486 043.00	11	9 394.70
NT	14 882	100 057	128 114 923.00	7	8 608.72
NU	26 267	104 997	200 596 991.00	4	7 636.84
Canada	102 120	14 486 219	979 077 389.97	142	9 587.52

Table I-3. Area of forest by ownership and province or territory (1000 ha)

Province/ Territory	Crown Land				Private				Total
	Federal								
	Crown	Native	Provincial	Municipal	Industrial	Nonindustrial	Unspecified	Unclassified	
NL	96	-	19 817	1	67	-	87	-	20 067
NS	108	9	1 274	-	928	2 028	-	0	4 347
PE	1	0	23	-	-	-	247	-	272
NB	131	2	2 984	-	1 283	1 806	-	0	6 207
QC	153	246	74 906	-	1 101	8 161	1	7	84 575
ON	232	490	62 085	63	633	4 790	-	-	68 294
MB	523	127	34 567	112	-	1 025	-	-	36 354
SK	830	124	21 828	6	-	-	1 469	-	24 258
AB	2 541	231	32 532	8	-	1 069	7	1	36 388
BC	424	227	61 822	-	-	1 775	-	-	64 247
YT	22 789	-	-	-	-	-	-	-	22 789
NT	33 346	-	-	-	-	-	-	-	33 346
NU	939	-	-	-	-	-	-	-	939
Canada	62 114	1 457	311 838	191	4 012	20 654	1 812	8	402 085

Table I-4. Area (1000 ha) by site index and province or territory

Province/	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]						
Territory	5.0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0–34.9	35.0–39.9
NL	1 369.07	3 391.64	20.44	-	-	-	-
NS	2.14	798.65	3 428.65	9.72	0.45	-	-
PE	19.76	125.15	101.08	7.35	-	-	-
NB	115.64	2 822.56	3 041.11	106.75	-	-	-
QC	18 498.87	-	-	-	-	-	-
ON	20 935.46	11 889.00	16 484.37	1 555.56	69.44	-	-
MB	4 703.77	5 358.01	8 501.44	-	-	-	-
SK	1 442.19	1 983.64	2 626.28	-	-	-	-
AB	5 178.17	12 293.75	2 024.36	-	-	-	-
BC	15 108.19	19 217.22	14 264.22	3 834.89	812.21	173.75	60.35
YT	6 652.08	1 105.74	38.64	0.75	-	-	-
NT	-	-	-	-	-	-	-
NU	2.99	-	-	-	-	-	-
Canada	74 028.31	58 985.36	50 530.59	5 515.02	882.10	173.75	60.35

Province/	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]						
Territory	40.0–44.9	45.0–49.9	50.0–54.9	55.0–59.9	Unclassified	Total	Average
NL	-	-	-	-	5 949.30	10 730.45	10.7
NS	-	-	-	-	0.11	4 239.73	16.6
PE	-	-	-	-	11.38	264.72	13.9
NB	-	-	-	-	5.10	6 091.17	15.1
QC	-	-	-	-	54 861.07	73 359.95	6.7
ON	-	-	-	-	2 824.11	53 757.93	11.7
MB	-	-	-	-	405.03	18 968.25	13.2
SK	-	-	-	-	13 990.59	20 042.69	13.4
AB	-	-	-	-	8 221.93	27 718.21	10.6
BC	5.97	1.82	0.19	0.05	4 431.30	57 910.16	13.4
YT	-	-	-	-	86.31	7 883.51	8.2
NT	-	-	-	-	28 352.21	28 352.21	0
NU	-	-	-	-	811.84	814.82	7.5
Canada	5.97	1.82	0.19	0.05	119 950.28	310 133.82	11.80

Table I-5. Volume (m^3/ha) on stocked forest land by site index and province or territory

Province/	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]						
Territory	5.0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0–34.9	35.0–39.9
NL	75.73	102.64	160.68	-	-	-	-
NS	7.57	62.19	101.77	112.31	121.00	-	-
PE	124.19	124.19	124.19	124.19	-	-	-
NB	106.56	93.50	95.29	109.43	-	-	-
QC	16.86	-	-	-	-	-	-
ON	103.28	164.77	176.10	185.92	157.54	-	-
MB	10.52	38.80	71.07	-	-	-	-
SK	96.12	88.50	148.46	-	-	-	-
AB	71.52	120.78	176.43	-	-	-	-
BC	147.58	206.59	236.93	265.40	315.27	427.14	552.14
YT	104.05	170.49	196.79	256.37	-	-	-
NT	-	-	-	-	-	-	-
NU	24.54	-	-	-	-	-	-
Canada	77.65	146.56	164.82	249.05	302.38	427.14	552.14

Province/	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]					
Territory	40.0–44.9	45.0–49.9	50.0–54.9	55.0–59.9	Unclassified	Total
NL	-	-	-	-	51.34	73.92
NS	-	-	-	-	38.72	94.55
PE	-	-	-	-	-	123.49
NB	-	-	-	-	96.80	94.95
QC	-	-	-	-	92.46	71.07
ON	-	-	-	-	-	141.28
MB	-	-	-	-	-	44.96
SK	-	-	-	-	38.12	62.61
AB	-	-	-	-	51.75	98.50
BC	524.87	777.86	828.33	413.77	287.00	213.50
YT	-	-	-	-	106.03	116.97
NT	-	-	-	-	31.59	31.59
NU	-	-	-	-	19.28	19.30
Canada	524.87	777.86	828.33	413.77	70.81	106.88

Table I-6. Average biomass (t/ha) on stocked forest land by site index and province or territory

Province/ Territory	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]						
	5.0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0–34.9	35.0–39.9
NL	104.45	116.34	133.97	-	-	-	-
NS	22.19	60.96	88.00	91.36	88.35	-	-
PE	106.99	106.99	106.99	106.99	-	-	-
NB	87.37	82.13	87.67	94.48	-	-	-
QC	30.53	-	-	-	-	-	-
ON	85.64	122.41	126.11	125.70	112.79	-	-
MB	33.56	39.92	56.88	-	-	-	-
SK	88.50	76.17	102.67	-	-	-	-
AB	78.54	103.64	131.37	-	-	-	-
BC	155.67	192.10	203.37	226.34	268.43	340.56	421.68
YT	95.05	131.56	149.57	183.39	-	-	-
NT	-	-	-	-	-	-	-
NU	34.33	-	-	-	-	-	-
Canada	79.37	128.71	131.01	207.39	255.72	340.56	421.68

Province/ Territory	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]					
	40.0–44.9	45.0–49.9	50.0–54.9	55.0–59.9	Unclassified	All site index classes
NL	-	-	-	-	84.88	99.73
NS	-	-	-	-	38.63	83.06
PE	-	-	-	-	3.55	106.41
NB	-	-	-	-	90.33	85.26
QC	-	-	-	-	84.25	69.05
ON	-	-	-	-	-	107.29
MB	-	-	-	-	-	45.57
SK	-	-	-	-	57.84	68.10
AB	-	-	-	-	72.77	93.28
BC	405.73	550.89	579.55	337.18	255.17	195.40
YT	-	-	-	-	101.74	102.18
NT	-	-	-	-	45.90	45.90
NU	-	-	-	-	31.02	31.03
Canada	405.73	550.89	579.55	337.18	75.01	98.85

Table I-7. Total volume (million m^3) on stocked forest land by site index and province or territory

Province/ Territory	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]						
	5.0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0–34.9	35.0–39.9
NL	92.23	281.03	2.36	-	-	-	-
NS	0.01	46.08	331.36	1.05	0.05	-	-
PE	2.45	15.54	12.55	0.91	-	-	-
NB	11.85	239.74	272.02	10.94	-	-	-
QC	311.84	-	-	-	-	-	-
ON	2 157.11	1 842.25	2 532.34	121.69	10.93	-	-
MB	48.82	175.02	510.79	-	-	-	-
SK	138.62	175.55	389.89	-	-	-	-
AB	370.33	1 484.85	357.15	-	-	-	-
BC	1 707.65	3 548.08	3 094.85	932.71	247.51	73.18	33.19
YT	397.45	148.68	6.62	0.11	-	-	-
NT	-	-	-	-	-	-	-
NU	0.07	-	-	-	-	-	-
Canada	5 238.44	7 956.82	7 515.94	1 067.42	258.48	73.18	33.19

Province/ Territory	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]					
	40.0–44.9	45.0–49.9	50.0–54.9	55.0–59.9	Unclassified	All site index classes
NL	-	-	-	-	186.62	562.24
NS	-	-	-	-	0.00	384.55
PE	-	-	-	-	-	31.46
NB	-	-	-	-	0.49	535.04
QC	-	-	-	-	4 333.27	4 645.11
ON	-	-	-	-	-	6 664.32
MB	-	-	-	-	-	734.63
SK	-	-	-	-	506.01	1 210.07
AB	-	-	-	-	323.40	2 535.73
BC	3.12	1.41	0.14	0.02	988.22	10 630.09
YT	-	-	-	-	0.57	553.43
NT	-	-	-	-	881.21	881.21
NU	-	-	-	-	15.45	15.53
Canada	3.12	1.41	0.14	0.02	7 235.25	29 383.41

Table I-8. Total biomass (million t) on stocked forest land by site index and province or territory

Province/ Territory	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]						
	5.0–9.9	10.0–14.9	15.0–19.9	20.0–24.9	25.0–29.9	30.0–34.9	35.0–39.9
NL	134.64	331.17	2.36	-	-	-	-
NS	0.04	45.16	291.73	0.85	0.03	-	-
PE	2.11	13.39	10.81	0.79	-	-	-
NB	9.72	210.57	250.27	9.44	-	-	-
QC	564.72	-	-	-	-	-	-
ON	1 788.72	1 368.59	1 813.42	82.28	7.83	-	-
MB	155.78	180.05	408.79	-	-	-	-
SK	127.63	151.09	269.64	-	-	-	-
AB	406.65	1 274.12	265.94	-	-	-	-
BC	1 801.24	3 299.13	2 656.56	795.41	210.73	58.35	25.35
YT	363.09	114.73	5.03	0.08	-	-	-
NT	-	-	-	-	-	-	-
NU	0.10	-	-	-	-	-	-
Canada	5 354.44	6 988.00	5 974.56	888.85	218.59	58.35	25.35

Province/ Territory	Site Index [stand height (m) at index age of 50 years (100 years in the Yukon)]					
	40.0–44.9	45.0–49.9	50.0–54.9	55.0–59.9	Unclassified	All site index classes
NL	-	-	-	-	308.53	776.70
NS	-	-	-	-	0.00	337.82
PE	-	-	-	-	0.01	27.11
NB	-	-	-	-	0.46	480.46
QC	-	-	-	-	3 948.46	4 513.18
ON	-	-	-	-	-	5 060.83
MB	-	-	-	-	-	744.63
SK	-	-	-	-	767.85	1 316.20
AB	-	-	-	-	454.58	2 401.29
BC	2.41	1.00	0.10	0.02	878.60	9 728.89
YT	-	-	-	-	0.54	483.47
NT	-	-	-	-	1 280.31	1 280.31
NU	-	-	-	-	25.19	25.29
Canada	2.41	1.00	0.10	0.02	7 664.52	27 176.18

Table I-9. Area (1000 ha) of forest land by stocking class and province or territory

Province/ Territory	Stocking class									
		Stocking not known			Stocked					
	Nonstocked	Disturbed	Not measured	Extent unknown	Regenerating	Partly	Fully	Total	Un-classified	Total
NL	85.85	2 856.58	-	3 474.48	390.87	1 030.05	2 892.63	7 788.02	-	10 730.45
NS	172.30	0.03	-	-	566.37	1 165.32	2 335.70	4 067.39	-	4 239.73
PE	-	9.95	-	-	1.43	8.13	245.21	254.77	-	264.72
NB	-	450.58	-	23.75	-	594.90	5 016.32	5 634.97	5.61	6 091.17
QC	-	7 996.86	0.18	2 366.30	355.37	36 408.96	26 232.29	65 362.91	-	73 359.95
ON	-	6 588.10	-	-	-	9 752.32	37 417.52	47 169.84	-	53 757.93
MB	-	2 628.93	-	-	-	4 811.79	11 527.53	16 339.32	-	18 968.25
SK	-	563.88	151.25	2 224.86	-	9 578.97	7 523.73	19 327.56	-	20 042.69
AB	0.33	1 974.87	-	2 492.49	894.48	5 188.59	17 167.46	25 743.01	-	27 718.21
BC	5 317.78	2 802.58	-	-	-	853.83	48 935.97	49 789.80	-	57 910.16
YT	-	3 152.06	-	5.05	-	4 274.54	451.87	4 731.46	-	7 883.51
NT	-	458.35	-	-	-	26 844.79	1 049.07	27 893.87	-	28 352.21
NU	-	-	-	-	-	805.93	8.90	814.82	-	814.82
Canada	5 576.26	29 482.76	151.43	10 586.93	2 208.51	101 318.14	160 804.18	274 917.76	5.61	310 133.82

Table I-10. Area (1000 ha) of stocked forest by age class and province or territory

Province/ Territory	Age (years)						
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100	101 to 120	121 to 140
NL	380.85	387.50	335.15	583.92	812.06	222.85	378.40
NS	577.80	577.39	1 529.44	481.62	39.10	5.89	0.00
PE	12.09	43.65	51.81	52.27	13.39	2.03	5.24
NB	1 186.77	427.39	904.82	1 227.38	959.32	471.28	194.67
QC	3 260.73	5 833.95	8 161.11	7 949.41	3 820.73	9 097.06	3 355.61
ON	1 577.40	2 621.10	6 326.43	9 058.57	6 933.62	4 565.42	3 171.02
MB	480.94	140.83	385.81	326.91	216.36	53.57	23.57
SK	110.71	340.70	910.51	1 666.33	1 009.59	1 307.05	546.26
AB	1 640.32	3 658.07	3 743.25	3 651.32	3 127.84	1 866.76	620.29
BC	2 639.55	2 703.53	3 280.14	4 764.23	4 567.48	5 535.91	4 221.36
YT	4.88	140.43	138.97	301.87	962.48	905.80	199.94
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	11 872.04	16 874.54	25 767.43	30 063.82	22 461.98	24 033.60	12 716.37

Province/ Territory	Age (years)						
	141 to 160	161 to 180	181 to 200	201 to 220	221 to 240	241 to 260	261 to 280
NL	619.83	261.47	-	-	-	-	-
NS	-	-	0.03	-	-	-	-
PE	-	-	-	-	-	-	-
NB	83.91	30.33	-	-	-	-	-
QC	1 342.60	671.23	-	-	-	-	-
ON	2 242.38	503.23	49.76	26.06	10.20	12.41	-
MB	5.42	0.40	0.02	0.01	-	-	-
SK	147.33	13.62	0.00	-	-	-	-
AB	236.58	134.69	42.81	67.42	21.29	15.08	1.86
BC	2 723.91	1 339.47	1 340.49	2 095.85	4 506.98	995.70	874.97
YT	54.19	13.50	6.38	2.60	0.51	0.19	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	7 456.16	2 967.94	1 439.49	2 191.94	4 538.98	1 023.38	876.83

Table I-10 continued

Province/ Territory	Age (years)						
	281 to 300	301 to 320	321 to 340	341 to 360	361 to 380	381 to 400	401+
NL	-	-	-	-	-	-	-
NS	-	-	-	-	-	-	-
PE	-	-	-	-	-	-	-
NB	-	-	-	-	-	-	-
QC	-	-	-	-	-	-	-
ON	-	-	-	-	-	-	-
MB	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-
AB	0.94	1.88	0.74	-	0.13	-	-
BC	798.35	1 649.96	1 627.57	161.62	64.09	31.09	210.73
YT	0.13	-	-	-	-	-	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	799.41	1 651.83	1 628.31	161.62	64.21	31.09	210.73

Province/ Territory	Uneven aged	Unclassified	Total
NL	13.46	3 792.52	7 788.02
NS	856.12	-	4 067.39
PE	68.94	5.36	254.77
NB	148.10	1.00	5 634.97
QC	3 016.59	18 853.88	65 362.91
ON	-	10 072.23	47 169.84
MB	3.55	14 701.93	16 339.32
SK	-	13 275.46	19 327.56
AB	-	6 911.76	25 743.01
BC	18.79	3 638.05	49 789.80
YT	0.11	1 999.50	4 731.46
NT	-	27 893.87	27 893.87
NU	-	814.82	814.82
Canada	4 125.65	101 960.38	274 917.76

Table I-11. Volume (m^3/ha) on stocked forest land by age class and province or territory

Province/ Territory	Age (years)						
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100	101 to 120	121 to 140
NL	1.94	40.36	82.39	106.64	112.47	114.29	119.33
NS	0.26	58.01	119.36	152.68	175.57	182.38	413.98
PE	109.50	124.28	124.24	124.10	124.10	124.10	124.06
NB	-	50.76	115.06	125.30	131.87	135.52	142.52
QC	18.56	46.80	104.78	114.60	127.27	91.73	90.17
ON	17.25	81.46	138.91	179.13	192.86	185.90	175.57
MB	0.08	45.46	70.81	90.93	97.11	72.50	52.80
SK	18.89	25.47	89.02	111.16	141.19	146.74	135.34
AB	5.05	42.14	89.00	143.73	178.59	187.49	190.93
BC	0.13	15.74	86.56	130.91	171.72	208.01	236.76
YT	55.80	38.24	71.59	135.84	162.05	156.73	182.45
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	8.50	46.22	108.28	140.84	165.27	150.33	170.05

Province/ Territory	Age (years)						
	141 to 160	161 to 180	181 to 200	201 to 220	221 to 240	241 to 260	261 to 280
NL	112.39	117.38	-	-	-	-	-
NS	-	-	278.98	-	-	-	-
PE	-	-	-	-	-	-	-
NB	148.99	146.37	-	-	-	-	-
QC	90.17	90.17	-	-	-	-	-
ON	171.16	173.94	193.67	201.12	214.96	214.87	-
MB	50.11	53.59	97.66	42.51	-	-	-
SK	116.76	111.96	42.02	-	-	-	-
AB	187.12	157.95	166.06	152.12	164.81	158.78	137.94
BC	228.91	257.61	263.42	282.18	231.53	376.69	342.87
YT	210.05	219.18	219.45	245.40	213.37	400.00	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	172.17	186.67	257.92	277.17	231.18	371.52	342.44

Table I-11 continued

Province/ Territory	Age (years)						
	281 to 300	301 to 320	321 to 340	341 to 360	361 to 380	381 to 400	401+
NL	-	-	-	-	-	-	-
NS	-	-	-	-	-	-	-
PE	-	-	-	-	-	-	-
NB	-	-	-	-	-	-	-
QC	-	-	-	-	-	-	-
ON	-	-	-	-	-	-	-
MB	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-
AB	131.96	101.51	122.06	-	61.37	-	-
BC	430.14	458.84	448.20	512.22	430.69	492.13	508.14
YT	184.20	-	-	-	-	-	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	429.75	458.43	448.05	512.22	429.97	492.13	508.14

Province/ Territory	Uneven aged	Unclassified	Total
NL	58.48	50.86	72.19
NS	101.47	-	94.55
PE	124.19	124.16	123.49
NB	137.08	85.82	94.95
QC	141.12	16.70	71.07
ON	-	68.34	141.28
MB	19.29	43.85	44.96
SK	-	38.12	62.61
AB	-	57.70	98.50
BC	273.83	287.18	213.50
YT	99.05	72.93	116.97
NT	-	31.59	31.59
NU	-	19.30	19.30
Canada	132.70	47.41	106.88

Table I-12. Volume (million m^3) of stocked forest by age class and province or territory

Province/ Territory	Age (years)						
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100	101 to 120	121 to 140
NL	0.74	15.64	27.61	62.27	91.33	25.47	45.16
NS	0.15	33.50	182.55	73.54	6.86	1.07	0.00
PE	1.32	5.42	6.44	6.49	1.66	0.25	0.65
NB	-	21.70	104.11	153.79	126.51	63.87	27.74
QC	60.51	273.05	855.10	910.99	486.25	834.44	302.58
ON	27.21	213.52	878.81	1 622.63	1 337.25	848.70	556.75
MB	0.04	6.40	27.32	29.73	21.01	3.88	1.24
SK	2.09	8.68	81.06	185.24	142.54	191.80	73.93
AB	8.29	154.15	333.17	524.80	558.60	350.00	118.43
BC	0.35	42.54	283.93	623.67	784.32	1 151.50	999.44
YT	0.27	5.37	9.95	41.00	155.97	141.96	36.48
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	100.97	779.98	2 790.04	4 234.13	3 712.31	3 612.96	2 162.40

Province/ Territory	Age (years)						
	141 to 160	161 to 180	181 to 200	201 to 220	221 to 240	241 to 260	261 to 280
NL	69.66	30.69	-	-	-	-	-
NS	-	-	0.01	-	-	-	-
PE	-	-	-	-	-	-	-
NB	12.50	4.44	-	-	-	-	-
QC	121.06	60.53	-	-	-	-	-
ON	383.81	87.53	9.64	5.24	2.19	2.67	-
MB	0.27	0.02	0.00	0.00	-	-	-
SK	17.20	1.52	0.00	-	-	-	-
AB	44.27	21.27	7.11	10.26	3.51	2.39	0.26
BC	623.52	345.06	353.11	591.41	1 043.52	375.07	300.00
YT	11.38	2.96	1.40	0.64	0.11	0.08	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	1 283.69	554.03	371.27	607.54	1 049.33	380.20	300.26

Table I-12 continued

Province/ Territory	Age (years)						
	281 to 300	301 to 320	321 to 340	341 to 360	361 to 380	381 to 400	401+
NL	-	-	-	-	-	-	-
NS	-	-	-	-	-	-	-
PE	-	-	-	-	-	-	-
NB	-	-	-	-	-	-	-
QC	-	-	-	-	-	-	-
ON	-	-	-	-	-	-	-
MB	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-
AB	0.12	0.19	0.09	-	0.01	-	-
BC	343.40	757.06	729.48	82.79	27.60	15.30	107.08
YT	0.02	-	-	-	-	-	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	343.55	757.25	729.57	82.79	27.61	15.30	107.08

Province/ Territory	Uneven aged	Unclassified	Total
NL	0.79	192.88	562.24
NS	86.87	-	384.55
PE	8.56	0.67	31.46
NB	20.30	0.09	535.04
QC	425.71	314.88	4 645.11
ON	-	688.37	6 664.32
MB	0.07	644.64	734.63
SK	-	506.01	1 210.07
AB	-	398.81	2 535.73
BC	5.14	1 044.79	10 630.09
YT	0.01	145.82	553.43
NT	-	881.21	881.21
NU	-	15.73	15.73
Canada	547.46	4 833.89	29 383.61

Table I-13. Average biomass (t/ha) on stocked forest land by age class and province or territory

Province/ Territory	Age (years)						
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100	101 to 120	121 to 140
NL	21.23	92.06	110.08	124.63	128.93	130.89	135.81
NS	10.47	60.70	101.79	122.80	133.61	131.90	263.84
PE	93.95	107.03	107.03	107.03	107.03	107.03	107.03
NB	15.96	72.16	101.93	106.01	108.32	111.32	114.99
QC	27.70	54.71	90.97	96.08	104.47	85.57	85.56
ON	22.79	70.75	105.71	128.82	137.89	133.85	129.53
MB	13.59	39.20	56.65	68.93	75.23	67.13	59.68
SK	30.78	36.31	74.59	87.84	103.62	107.94	104.65
AB	16.69	61.32	90.26	119.31	134.77	137.42	137.32
BC	35.84	67.68	120.95	146.96	171.78	188.93	201.69
YT	63.97	55.53	76.27	112.61	126.28	124.21	137.33
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	24.66	61.86	98.44	117.65	134.41	126.15	141.14

Province/ Territory	Age (years)						
	141 to 160	161 to 180	181 to 200	201 to 220	221 to 240	241 to 260	261 to 280
NL	131.79	135.44	-	-	-	-	-
NS	-	-	213.89	-	-	-	-
PE	-	-	-	-	-	-	-
NB	112.90	109.29	-	-	-	-	-
QC	85.56	85.56	-	-	-	-	-
ON	127.64	131.92	149.93	156.47	165.39	158.15	-
MB	59.93	64.08	74.40	59.10	-	-	-
SK	96.11	94.24	66.53	-	-	-	-
AB	136.32	122.73	126.52	123.45	128.23	122.98	113.61
BC	196.75	214.64	217.78	239.55	201.14	305.29	288.94
YT	152.76	156.72	157.23	167.04	151.02	260.40	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	145.28	158.36	212.45	234.90	200.71	300.81	288.57

Table I-13 continued

Province/ Territory	Age (years)						
	281 to 300	301 to 320	321 to 340	341 to 360	361 to 380	381 to 400	401+
NL	-	-	-	-	-	-	-
NS	-	-	-	-	-	-	-
PE	-	-	-	-	-	-	-
NB	-	-	-	-	-	-	-
QC	-	-	-	-	-	-	-
ON	-	-	-	-	-	-	-
MB	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-
AB	111.29	98.14	110.01	-	80.94	-	-
BC	345.38	371.44	358.11	399.15	357.03	392.74	402.11
YT	134.45	-	-	-	-	-	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	345.07	371.13	358.00	399.15	356.49	392.74	402.11

Province/ Territory	Uneven aged	Unclassified	All age classes
NL	93.57	84.29	99.73
NS	88.66	-	83.06
PE	107.03	107.03	106.41
NB	112.74	82.68	85.26
QC	121.25	31.54	69.05
ON	-	65.33	107.29
MB	42.27	45.33	45.57
SK	-	57.84	68.10
AB	-	78.88	93.28
BC	252.05	255.98	195.40
YT	94.20	78.66	102.18
NT	-	45.90	45.90
NU	-	31.03	31.03
Canada	114.38	58.32	98.85

Table I-14. Total biomass (million t) on stocked forest land by age class and province or territory

Province/ Territory	Age (years)						
	1 to 20	21 to 40	41 to 60	61 to 80	81 to 100	101 to 120	121 to 140
NL	8.08	35.67	36.89	72.77	104.70	29.17	51.39
NS	6.05	35.04	155.67	59.14	5.22	0.78	0.00
PE	1.14	4.67	5.55	5.59	1.43	0.22	0.56
NB	18.94	30.84	92.23	130.12	103.91	52.46	22.39
QC	90.32	319.15	742.42	763.78	399.14	778.45	287.10
ON	35.96	185.46	668.80	1 166.96	956.11	611.06	410.73
MB	6.54	5.52	21.85	22.54	16.28	3.60	1.41
SK	3.41	12.37	67.92	146.37	104.61	141.08	57.16
AB	27.37	224.30	337.85	435.64	421.53	256.53	85.18
BC	94.60	182.99	396.72	700.14	784.60	1 045.91	851.40
YT	0.31	7.80	10.60	33.99	121.54	112.51	27.46
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	292.72	1 043.81	2 536.50	3 537.05	3 019.08	3 031.75	1 794.78

Province/ Territory	Age (years)						
	141 to 160	161 to 180	181 to 200	201 to 220	221 to 240	241 to 260	261 to 280
NL	81.69	35.41	-	-	-	-	-
NS	-	-	0.01	-	-	-	-
PE	-	-	-	-	-	-	-
NB	9.47	3.32	-	-	-	-	-
QC	114.87	57.43	-	-	-	-	-
ON	286.22	66.38	7.46	4.08	1.69	1.96	-
MB	0.32	0.03	0.00	0.00	-	-	-
SK	14.16	1.28	0.00	-	-	-	-
AB	32.25	16.53	5.42	8.32	2.73	1.85	0.21
BC	535.93	287.50	291.94	502.05	906.52	303.98	252.82
YT	8.28	2.12	1.00	0.43	0.08	0.05	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	1 083.20	470.00	305.83	514.89	911.01	307.85	253.03

Table I-14 continued

Province/ Territory	Age (years)						
	281 to 300	301 to 320	321 to 340	341 to 360	361 to 380	381 to 400	401+
NL	-	-	-	-	-	-	-
NS	-	-	-	-	-	-	-
PE	-	-	-	-	-	-	-
NB	-	-	-	-	-	-	-
QC	-	-	-	-	-	-	-
ON	-	-	-	-	-	-	-
MB	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-
AB	0.10	0.18	.08	-	0.01	-	-
BC	275.73	612.87	582.86	64.51	22.88	12.21	84.74
YT	0.02	-	-	-	-	-	-
NT	-	-	-	-	-	-	-
NU	-	-	-	-	-	-	-
Canada	275.85	613.05	582.94	64.51	22.89	12.21	84.74

Province/ Territory	Uneven aged	Unclassified	Total
NL	1.26	319.66	776.70
NS	75.90	-	337.82
PE	7.38	0.57	27.11
NB	16.70	0.08	480.46
QC	365.77	594.74	4 513.18
ON	-	657.97	5 060.83
MB	0.15	666.39	744.63
SK	-	767.85	1 316.20
AB	-	545.18	2 401.29
BC	4.73	931.27	9 728.89
YT	0.01	157.28	483.47
NT	-	1 280.31	1 280.31
NU	-	25.29	25.29
Canada	471.90	5 946.59	27 176.18

Table I-15. Area (1000 ha) of stocked forest by maturity class and province or territory

Province/ Territory	Regeneration	Immature	Mature	Overmature	Uneven aged	Unclassified	Total
NL	54.23	799.08	1 393.70	1 735.04	13.46	3 792.52	7 788.02
NS	631.27	2 443.49	115.86	20.65	856.12	-	4 067.39
PE	12.09	71.67	89.02	7.69	68.94	5.36	254.77
NB	509.43	2 643.37	1 999.64	333.07	148.10	1.36	5 634.97
QC	4 657.95	17 027.27	20 013.33	1 828.84	3 016.59	18 818.93	65 362.91
ON	1 678.20	10 400.27	18 867.60	12 130.76	-	4 093.02	47 169.84
MB	4 227.48	4 861.71	2 280.77	613.06	3.55	4 352.76	16 339.32
SK	8.52	3 090.31	3 023.23	322.25	-	12 883.24	19 327.56
AB	2 983.80	10 502.47	4 946.19	371.14	-	6 939.41	25 743.01
BC	2 639.55	14 814.09	28 606.52	109.86	18.79	3 601.01	49 789.80
YT	5.20	2 567.83	1 736.03	288.66	0.11	133.63	4 731.46
NT	-	-	-	-	-	27 893.87	27 893.87
NU	-	-	-	-	-	814.82	814.82
Canada	17 407.71	69 221.56	83 071.88	17 761.01	4 125.65	83 329.94	274 917.76

Table I-16. Volume (m^3/ha) on stocked forest land by maturity class and province or territory

Province/ Territory	Regeneration	Immature	Mature	Overmature	Uneven aged	Unclassified	Total
NL	0.17	29.14	105.84	113.98	58.48	50.86	72.19
NS	0.00	114.19	137.59	131.90	101.47	-	94.55
PE	109.50	124.19	124.19	124.19	124.19	124.16	123.49
NB	-	72.26	135.87	156.00	137.08	63.16	94.95
QC	19.19	91.62	103.03	106.62	141.12	16.63	71.07
ON	19.69	133.02	151.57	184.30	-	37.23	141.28
MB	-	73.24	112.54	141.28	19.29	8.08	44.96
SK	14.29	83.28	144.95	156.88	-	36.00	62.61
AB	11.88	102.51	192.69	187.05	-	57.81	98.50
BC	0.13	120.57	271.95	228.71	273.83	287.05	213.50
YT	53.27	85.89	153.91	204.23	99.05	48.15	116.97
NT	-	-	-	-	-	31.59	31.59
NU	-	-	-	-	-	19.30	19.30
Canada	9.19	103.18	181.32	167.49	132.70	41.95	106.88

Table I-17. Volume (million m^3) by maturity class and province or territory

Province/ Territory	Regeneration	Immature	Mature	Overmature	Uneven aged	Unclassified	Total
NL	0.01	23.29	147.51	197.76	0.79	192.88	562.24
NS	0.00	279.01	15.94	2.72	86.87	-	384.55
PE	1.32	8.90	11.06	0.95	8.56	0.67	31.46
NB	-	191.00	271.69	51.96	20.30	0.09	535.04
QC	89.38	1 560.08	2 062.04	194.99	425.71	312.91	4 645.11
ON	33.04	1 383.43	2 859.76	2 235.71	-	152.38	6 664.32
MB	-	356.08	256.68	86.61	0.07	35.18	734.63
SK	0.12	257.36	438.20	50.56	-	463.83	1 210.07
AB	35.45	1 076.63	953.09	69.42	-	401.14	2 535.73
BC	0.35	1 786.20	7 779.62	25.13	5.14	1 033.66	10 630.09
YT	0.28	220.56	267.20	58.95	0.01	6.43	553.43
NT	-	-	-	-	-	881.21	881.21
NU	-	-	-	-	-	15.73	15.73
Canada	159.96	7 142.52	15 062.80	2 974.77	547.46	3 496.11	29 383.61

Table I-18. Average biomass (t/ha) on stocked forest land by maturity class and province/territory

Province/ Territory	Regeneration	Immature	Mature	Overmature	Uneven aged	Unclassified	All maturity classes
NL	14.18	65.51	125.03	131.65	93.57	84.29	99.73
NS	10.49	98.26	111.77	108.95	88.66	-	83.06
PE	93.95	107.03	107.03	107.03	107.03	107.03	106.41
NB	12.23	74.57	110.58	117.72	112.74	60.99	85.26
QC	30.22	82.96	91.58	92.14	121.25	31.49	69.05
ON	24.90	102.99	114.21	132.21	-	46.23	107.29
MB	7.36	65.54	84.57	98.83	42.27	32.46	45.57
SK	22.93	72.26	106.32	109.32	-	57.13	68.10
AB	25.60	98.23	140.41	137.50	-	78.92	93.28
BC	35.84	140.94	230.63	213.37	252.05	255.64	195.40
YT	62.86	83.21	122.25	151.33	94.20	101.30	102.18
NT	-	-	-	-	-	45.90	45.90
NU	-	-	-	-	-	31.03	31.03
Canada	22.97	99.05	149.56	127.08	114.38	57.20	98.85

Table I-19. Total biomass (million t) on stocked forest land by maturity class and province or territory

Province/ Territory	Regeneration	Immature	Mature	Overmature	Uneven aged	Unclassified	Total
NL	0.77	52.34	174.26	228.41	1.26	319.66	776.70
NS	6.62	240.10	12.95	2.25	75.90	-	337.82
PE	1.14	7.67	9.53	0.82	7.38	0.57	27.11
NB	6.23	197.13	221.11	39.21	16.70	0.08	480.46
QC	140.75	1 412.62	1 832.87	168.52	365.77	592.65	4 513.18
ON	41.79	1 071.16	2 154.83	1 603.82	-	189.23	5 060.83
MB	31.11	318.62	192.89	60.59	0.15	141.27	744.63
SK	0.20	223.31	321.42	35.23	-	736.05	1 316.20
AB	76.37	1 031.69	694.51	51.03	-	547.68	2 401.29
BC	94.60	2 087.97	6 597.60	23.44	4.73	920.55	9 728.89
YT	0.33	213.68	212.24	43.68	0.01	13.54	483.47
NT	-	-	-	-	-	1 280.31	1 280.31
NU	-	-	-	-	-	25.29	25.29
Canada	399.89	6 856.30	12 424.20	2 257.00	471.90	4 766.88	27 176.18

Table I-20. Area (1000 ha) of stocked forest by forest type and province or territory

Province/ Territory	Softwood	Mixedwood	Hardwood	Unclassified	Total
NL	7 258.61	458.44	70.97	-	7 788.02
NS	2 216.22	1 091.93	501.31	257.93	4 067.39
PE	60.40	120.85	73.52	-	254.77
NB	2 465.80	1 769.94	1 386.29	12.94	5 634.97
QC	47 586.90	10 669.50	7 091.97	14.54	65 362.91
ON	27 467.17	12 271.98	7 430.61	0.08	47 169.84
MB	12 012.66	1 835.73	2 490.94	-	16 339.32
SK	9 094.74	7 075.63	3 149.51	7.69	19 327.56
AB	11 942.75	4 334.68	7 730.20	1 735.37	25 743.01
BC	40 750.57	6 692.53	2 346.71	-	49 789.80
YT	3 721.24	908.95	101.26	-	4 731.46
NT	14 889.53	13 003.93	0.40	-	27 893.87
NU	424.16	390.47	0.20	-	814.82
Canada	179 890.76	60 624.56	32 373.89	2 028.55	274 917.76

Table I-21. Volume (m^3/ha) by forest type and province or territory

Province/ Territory	Softwood	Mixedwood	Hardwood	Unclassified	Total
NL	70.57	94.51	93.74	-	72.19
NS	101.22	96.76	108.84	-	94.55
PE	120.53	124.15	124.84	-	123.49
NB	96.57	91.97	96.76	-	94.95
QC	57.30	100.75	118.92	-	71.07
ON	126.01	152.16	179.76	-	141.28
MB	33.80	84.27	69.81	-	44.96
SK	52.01	50.58	120.40	-	62.61
AB	97.77	119.68	103.39	28.90	98.50
BC	231.19	143.34	106.39	-	213.50
YT	120.21	104.87	106.58	-	116.97
NT	39.93	22.04	68.00	-	31.59
NU	22.33	15.49	20.28	-	19.05
Canada	109.45	93.16	123.45	24.72	106.88

Table I-22. Volume (1000 m^3) by forest type and province or territory

Province/ Territory	Softwood	Mixedwood	Hardwood	Unclassified	Total
NL	512 258.95	43 327.65	6 653.11	-	562 239.71
NS	224 328.78	105 660.32	54 562.76	-	384 551.86
PE	7 280.06	15 003.74	9 178.00	-	31 461.80
NB	238 117.51	162 784.02	134 137.54	-	535 039.06
QC	2 726 753.19	1 074 952.34	843 402.82	-	4 645 108.34
ON	3 461 253.42	1 867 340.80	1 335 725.04	-	6 664 319.27
MB	406 038.27	154 689.48	173 898.65	-	734 626.40
SK	472 997.88	357 863.59	379 211.12	-	1 210 072.60
AB	1 167 593.31	518 783.11	799 208.37	50 146.87	2 535 731.67
BC	9 421 131.24	959 285.82	249 673.12	-	10 630 090.18
YT	447 314.00	95 323.07	10 793.17	-	553 430.24
NT	594 612.62	286 568.97	27.20	-	881 208.79
NU	9 471.73	6 049.54	4.05	-	15 525.32
Canada	19 689 151.00	5 647 623.46	3 996 474.94	50 146.87	29 383 405.20

Table I-23. Average biomass (t/ha) on stocked forest land by forest type and province or territory

Province/ Territory	Softwood	Mixedwood	Hardwood	Unclassified	Total
NL	99.07	109.88	101.62	-	99.73
NS	83.99	89.23	106.45	3.40	83.06
PE	104.51	106.99	107.01	-	106.41
NB	76.17	85.97	101.30	3.37	85.26
QC	59.73	86.95	104.78	8.05	69.05
ON	97.19	111.89	137.04	106.70	107.29
MB	40.57	62.64	57.11	-	45.57
SK	64.96	63.22	88.12	78.21	68.10
AB	90.37	98.72	98.65	75.74	93.28
BC	206.66	148.71	133.05	-	195.40
YT	104.00	95.11	98.78	-	102.18
NT	52.05	38.86	83.87	-	45.90
NU	32.79	29.13	32.10	-	31.03
Canada	102.09	85.81	107.34	65.61	98.85

Table I-24. Total biomass (million t) on stocked forest land by forest type and province or territory

Province/ Territory	Softwood	Mixedwood	Hardwood	Unclassified	Total
NL	719.11	50.37	7.21	-	776.70
NS	186.15	97.43	53.36	0.88	337.82
PE	6.31	12.93	7.87	-	27.11
NB	187.82	152.17	140.43	0.04	480.46
QC	2 842.24	927.69	743.13	0.12	4 513.18
ON	2 669.42	1 373.14	1 018.27	0.01	5 060.83
MB	487.37	114.99	142.26	-	744.63
SK	590.79	447.29	277.53	0.60	1 316.20
AB	1 079.33	427.93	762.59	131.44	2 401.29
BC	8 421.43	995.24	312.22	-	9 728.89
YT	387.02	86.45	10.00	-	483.47
NT	774.93	505.34	0.03	-	1 280.31
NU	13.91	11.37	0.01	-	25.29
Canada	18 365.82	5 202.36	3 474. 92	133.08	27 176.18

Table I-25. Area (1000 ha) of stocked forest by predominant genus and province or territory

Province/ Territory	Spruce	Pine	Fir	Hemlock	Douglas-fir	Larch	Cedar & other conifers	Unspecified conifers
NL	2 349.70	0.90	1 506.79	-	-	3.52	-	3 696.67
NS	1 775.37	104.59	362.58	22.65	-	26.82	0.00	68.19
PE	118.27	0.36	9.47	0.01	0.00	10.29	0.10	-
NB	1 789.29	226.56	907.26	10.18	-	45.32	196.95	82.04
QC	20 316.44	2 451.56	5 043.11	24.87	-	121.32	231.72	21 880.32
ON	14 630.59	6 179.93	1 385.34	179.99	-	318.40	1 025.00	8 948.21
MB	4 476.89	3 797.87	51.01	-	-	188.25	5.23	4 352.56
SK	2 510.99	2 326.10	1.05	-	-	55.62	-	10 099.67
AB	7 047.09	5 220.50	23.96	-	10.96	56.21	-	1 168.02
BC	9 919.73	14 310.62	5 908.91	4 354.43	4 280.75	427.83	2 226.65	3 217.96
YT	3 219.34	1 022.87	75.98	-	-	29.78	-	130.41
NT	-	-	-	-	-	-	-	27 783.22
NU	-	-	-	-	-	-	-	814.62
Canada	68 153.70	35 641.86	15 275.47	4 592.14	4 291.71	1 283.37	3 685.64	82 241.89

Province/ Territory	Poplar	Birch	Maple	Other hardwoods	Unspecified hardwoods	Unclassified	Total
NL	11.97	213.09	0.07	-	5.01	0.30	7 788.02
NS	56.41	3.04	3.95	1 356.76	27.40	259.66	4 067.39
PE	25.27	10.32	73.70	5.55	-	1.43	254.77
NB	306.79	402.19	484.48	950.86	219.88	13.17	5 634.97
QC	2 436.97	6 410.19	3 357.71	401.33	1 849.69	837.70	65 362.91
ON	6 349.20	3 618.98	2 736.82	635.47	1 161.83	0.08	47 169.84
MB	3 281.54	28.49	25.17	128.56	0.20	3.55	16 339.32
SK	2 906.38	88.09	5.67	0.07	1 233.94	99.98	19 327.56
AB	8 466.44	44.28	-	-	891.32	2 814.23	25 743.01
BC	4 180.63	403.69	18.06	160.64	173.52	206.38	49 789.80
YT	229.86	20.19	-	-	2.93	0.11	4 731.46
NT	-	-	-	-	46.81	63.84	27 893.87
NU	-	-	-	-	0.20	-	814.82
Canada	28 251.45	11 242.54	6 705.61	3 639.24	5 612.72	4 300.40	274 917.76

Table I-26. Total volume (million m^3) on stocked forest by predominant genus and province or territory

Province/ Territory	Spruce	Pine	Fir	Hemlock	Douglas-fir	Larch	Cedar & other conifers	Unspecified conifers
NL	221.40	0.04	134.06	-	-	0.18	-	186.08
NS	189.85	16.25	29.41	4.36	-	1.75	0.00	0.03
PE	14.63	0.04	1.18	0.00	0.00	1.28	0.01	-
NB	173.77	16.43	90.52	1.39	-	4.65	28.90	0.07
QC	1 733.41	244.27	525.49	5.24	-	8.98	30.31	438.19
ON	2 316.26	938.36	221.22	38.88	-	36.79	170.99	569.18
MB	255.60	163.42	4.27	-	-	10.62	0.40	35.18
SK	252.45	166.22	0.11	-	-	4.47	-	263.76
AB	699.67	655.38	3.22	-	1.46	2.39	-	45.88
BC	2 009.49	2 251.32	1 259.48	1 782.40	876.78	71.08	822.71	942.74
YT	353.65	148.51	7.78	-	-	2.70	-	6.22
NT	-	-	-	-	-	-	-	876.38
NU	-	-	-	-	-	-	-	15.52
Canada	8 220.19	4 600.24	2 276.75	1 832.28	878.23	144.88	1 053.32	3 379.23

Province/ Territory	Poplar	Birch	Maple	Other hardwoods	Unspecified hardwoods	Unclassified	Total
NL	0.71	19.47	0.00	-	0.27	0.02	562.24
NS	7.20	0.20	0.53	134.91	0.04	0.00	384.55
PE	3.14	1.28	9.20	0.69	-	0.00	31.46
NB	28.08	31.07	53.68	100.27	6.22	0.00	535.04
QC	312.44	664.99	494.86	32.47	154.47	-	4 645.11
ON	1 128.98	508.33	513.93	97.94	123.45	-	6 664.32
MB	251.68	1.03	2.82	9.52	0.00	0.07	734.63
SK	383.44	6.90	0.53	0.01	123.48	8.71	1 210.07
AB	915.95	2.07	-	-	81.81	127.90	2 535.73
BC	452.31	31.75	4.82	35.81	41.40	48.01	10 630.09
YT	31.18	3.17	-	-	0.21	0.01	553.43
NT	-	-	-	-	1.97	2.86	881.21
NU	-	-	-	-	0.00	-	15.53
Canada	3 515.10	1 270.26	1 080.37	411.63	533.33	187.59	29 383.41

Table I-27. Total biomass (million t) on stocked forest by predominant genus and province or territory

Province/ Territory	Spruce	Pine	Fir	Hemlock	Douglas-fir	Larch	Cedar & other conifers	Unspecified conifers
NL	277.30	0.05	164.78	-	-	0.39	-	310.60
NS	156.67	11.53	26.59	3.15	-	1.55	0.00	0.26
PE	12.65	0.04	1.01	0.00	0.00	1.10	0.01	-
NB	141.08	13.25	74.88	1.08	-	3.66	20.56	0.36
QC	1 658.64	200.63	451.73	3.96	-	8.29	22.15	711.52
ON	1 714.36	648.26	163.61	29.73	-	28.70	120.63	563.28
MB	234.59	147.05	3.50	-	-	9.31	0.31	141.26
SK	218.62	150.14	0.08	-	-	3.81	-	560.09
AB	641.34	549.44	2.58	-	1.93	4.24	-	57.49
BC	1 740.87	2 079.04	1 131.71	1 507.04	926.01	82.90	712.10	831.19
YT	311.65	119.27	7.11	-	-	2.53	-	13.22
NT	-	-	-	-	-	-	-	1 273.33
NU	-	-	-	-	-	-	-	25.28
Canada	7 107.77	3 918.71	2 027.58	1 544.95	927.94	146.49	875.77	4 487.89

Province/ Territory	Poplar	Birch	Maple	Other hardwoods	Unspecified hardwoods	Unclassified	Total
NL	0.78	22.35	0.00	-	0.41	0.03	776.70
NS	5.85	0.22	0.52	129.36	1.24	0.89	337.82
PE	2.70	1.10	7.89	0.59	-	0.01	27.11
NB	26.43	32.09	54.93	98.21	13.88	0.05	480.46
QC	242.07	584.06	439.62	28.84	141.43	20.24	4 513.18
ON	780.72	398.86	431.46	82.54	98.67	0.01	5 060.83
MB	195.59	0.90	2.67	9.28	0.01	0.15	744.63
SK	275.28	6.30	0.48	0.01	93.97	7.42	1 316.20
AB	840.20	4.02	-	-	84.04	216.01	2 401.29
BC	541.88	50.51	4.30	33.66	40.40	47.30	9 728.89
YT	26.81	2.59	-	-	0.28	0.01	483.47
NT	-	-	-	-	2.89	4.09	1 280.31
NU	-	-	-	-	0.01	-	25.29
Canada	2 938.30	1 102.99	941.89	382.50	477.22	296.19	27 176.18

Table I-28. Area (1000 ha) of stocked forest by leading species and forest type

First species	Softwood	Mixedwood	Hardwood	Unclassified	Total
Spruce (general)	5 785.70	743.77	-	-	6 529.47
Black spruce	32 343.59	2 973.69	11.51	-	35 328.79
Red spruce	1.80	43.14	3.95	-	98.89
Norway spruce	35.59	0.11	-	-	35.70
Engelmann spruce	912.13	24.30	0.01	-	936.44
White spruce	6 181.95	2 721.48	12.15	-	8 915.58
Sitka spruce	80.41	1.94	-	-	82.35
Black & red spruce	19 877.40	950.29	54.91	-	20 882.60
Red & white spruce	609.42	202.16	0.14	-	811.72
Spruce & balsam fir	20.49	34.65	0.03	-	55.17
Spruces subtotal	65 898.48	7 695.53	82.70	-	73 676.71
Pine (general)	107.20	0.88	-	-	108.07
Western white pine	17.64	1.40	-	-	19.04
Eastern white pine	504.63	798.19	34.64	-	1 337.47
Jack pine	13 006.36	2 324.00	13.94	-	15 344.30
Lodgepole pine	16 231.62	2 054.22	-	-	18 285.84
Whitebark pine	61.23	0.03	-	-	61.26
Austrian pine	0.00	-	-	-	0.00
Ponderosa pine	147.46	1.24	-	-	148.70
Red pine	179.20	59.19	1.67	-	240.05
Scots pine	31.45	1.13	0.07	-	32.65
Hybrid jack & lodgepole pine	181.31	31.49	-	-	212.81
Pines subtotal	30 468.12	5 271.76	50.32	-	35 790.20
Fir (general)	2 835.66	27.07	-	-	2 862.73
Amabilis fir	269.44	0.64	-	-	270.08
Balsam fir	7 727.96	3 313.53	173.17	-	11 214.66
Grand fir	1.68	0.05	-	-	1.73
Subalpine (or alpine) fir	2 803.64	48.82	5.37	-	2 857.83
Alpine, amabilis, & grand fir	0.35	-	-	-	0.35
Japanese fir	0.00	-	-	-	0.00
Balsam fir & spruce	4.48	9.01	0.06	-	13.55
Firs subtotal	13 643.22	3 399.12	178.60	-	17 220.94
Hemlock (general)	2 373.10	31.80	-	-	2 404.89
Eastern hemlock	64.14	267.32	17.18	-	348.63
Western hemlock	1 720.87	34.44	-	-	1 755.31
Mountain hemlock	191.98	0.20	-	-	192.17
Western & mountain hemlock	1.50	-	-	-	1.50
Hemlocks subtotal	4 351.58	333.76	17.18	-	4 702.52
Douglas-fir	3 958.54	333.14	-	-	4 291.68
Tamarack/larch (general)	174.02	11.21	-	-	185.23
European larch	0.18	-	-	-	0.18
Tamarack	753.26	61.19	10.06	-	824.52
Western larch	230.27	3.85	-	-	234.12
Subalpine larch	3.28	-	-	-	3.28
Japanese larch	0.06	-	-	-	0.06
Larches subtotal	1 161.07	76.25	10.06	-	1 247.39
Eastern white-cedar	1 137.10	747.65	18.31	-	1 903.06

Table I-28. continued

First species	Softwood	Mixedwood	Hardwood	Unclassified	Total
Western redcedar	1 927.17	20.56	-	-	1 947.73
Yellow cypress	278.91	0.01	-	-	278.92
Unspecified coniferous species	56 690.39	19 256.39	0.38	-	75 947.17
Other conifers subtotal	60 033.56	20 024.62	18.69	-	80 076.87
Poplar/aspen (general)	3.02	5 114.01	8 140.85	-	13 257.88
Trembling aspen	86.70	5 677.35	8 865.60	-	14 629.66
European white poplar	-	-	0.01	-	0.01
Balsam poplar	0.50	244.94	597.05	-	842.49
Eastern cottonwood	-	0.01	0.78	-	0.79
Largetooth aspen	0.21	17.62	52.96	-	70.79
Hybrid poplar	-	-	0.14	-	0.14
Balsam poplar, largetooth aspen, & eastern cottonwood	0.41	14.24	30.43	-	45.08
Poplars subtotal	90.83	11 068.18	17 687.83	-	28 846.84
Birch (general)	-	74.91	96.58	-	171.48
Yellow birch	5.73	1 042.50	716.12	-	1 764.36
White birch	-	136.55	96.73	-	233.28
Gray birch	0.01	1.72	2.61	-	4.34
Alaska paper birch	-	0.03	0.08	-	0.11
White birch & Alaska paper birch	114.97	5 151.39	2 815.48	-	8 081.84
European birch	-	-	0.00	-	0.00
White & gray birch	0.03	158.19	185.04	-	343.26
Birches subtotal	120.73	6 565.28	3 912.64	-	10 598.66
Maple (general)	0.08	0.04	0.28	-	0.40
Sugar maple	8.60	177.25	2 336.38	-	2 522.23
Bigleaf maple	-	5.83	12.23	-	18.06
Manitoba maple	-	0.03	30.81	-	30.83
Red maple	25.96	526.59	566.36	-	1 118.91
Sugar & black maple	0.11	282.70	1 868.18	-	2 151.00
Silver & red maple	0.59	162.98	421.95	-	585.53
Maples subtotal	35.35	1 155.42	5 236.19	-	6 426.95
Unspecified broadleaved species	8.64	852.26	2 428.51	-	3 289.41
Hickory	-	0.00	0.12	-	0.13
Bitternut	-	0.02	0.02	-	0.04
Red alder	-	102.34	58.30	-	160.64
Speckled alder	0.01	94.14	99.39	-	193.53
Ironwood	-	0.64	4.45	-	5.08
Beech	0.09	11.24	81.33	-	92.66
White oak	-	2.95	21.18	-	24.12
Bur oak	-	0.00	92.06	-	92.06
Red oak	0.37	90.98	343.81	-	435.15
Elm	0.05	0.57	4.19	-	4.81
White elm	-	0.06	6.66	-	6.71
Black cherry	0.03	0.41	6.37	-	6.81
Honey-locust	-	-	0.00	-	0.00
Black locust	-	-	0.13	-	0.13
Basswood	0.00	8.39	15.75	-	24.14

Table I-28. continued

First species	Softwood	Mixedwood	Hardwood	Unclassified	Total
Ash (general)	0.01	0.14	9.04	-	9.18
White ash	-	0.15	2.21	-	2.36
Black ash	0.67	57.54	148.56	-	206.77
Red ash	-	0.12	20.43	-	20.55
Willow	-	0.01	0.44	-	0.45
Mountain-ash	-	-	0.00	-	0.00
Tolerant hardwoods	1.17	357.58	530.06	-	888.81
Intolerant hardwoods	39.23	931.10	1 305.97	-	2 276.31
Other hardwoods subtotal	50.27	2 510.63	5 178.97	-	7 739.87
Unclassified	79.00	2 190.88	0.70	2 028.55	4 299.13
Total	179 890.76	60 624.56	32 373.89	2 028.55	274 917.76

Table I-29. Coniferous and broadleaved volume (1000 m^3) by leading species.

First species	Coniferous	Broadleaved	Total
Spruce (general)	1 346 589.42	41 793.53	1 388 382.95
Black spruce	3 485 469.11	346 290.76	3 831 759.87
Red spruce	8 349.98	2 641.56	10 991.54
Norway spruce	54.28	0.24	54.52
Engelmann spruce	135 820.52	3 176.16	138 996.68
White spruce	1 102 178.88	180 138.73	1 282 317.61
Sitka spruce	38 862.89	333.17	39 196.06
Black & red spruce	1 628 481.37	105 166.83	1 733 648.20
Red & white spruce	73 652.45	13 608.07	87 260.52
Spruce & balsam fir	4 963.47	1 786.47	6 749.95
Spruces subtotal	7 824 422.37	694 935.52	8 519 357.89
Pine (general)	5 663.96	4 738.43	10 402.39
Western white pine	4 935.10	163.08	5 098.18
Eastern white pine	182 725.69	69 369.28	252 094.97
Jack pine	1 170 053.94	208 420.09	1 378 474.03
Lodgepole pine	2 795 136.16	87 107.22	2 882 243.38
Whitebark pine	9 430.67	1.78	9 432.45
Ponderosa pine	13 118.91	48.96	13 167.87
Red pine	36 175.70	5 348.58	41 524.28
Scots pine	3 672.33	119.92	3 792.25
Hybrid jack & lodgepole pine	27 527.08	2 526.40	30 053.48
Pines subtotal	4 248 439.55	377 843.73	4 626 283.28
Fir (general)	652 178.83	1 500.48	653 679.31
Amabilis fir	93 877.37	109.97	93 987.34
Balsam fir	933 552.29	204 156.46	1 137 708.75
Grand fir	43.07	0.90	43.97
Subalpine (or alpine) fir	517 721.16	2 547.44	520 268.61
Alpine, amabilis, & grand fir	113.27	-	113.27
Balsam fir & spruce	1 050.20	424.76	1 474.96
Firs subtotal	2 198 536.19	208 740.02	2 407 276.20
Hemlock (general)	1 095 394.14	4 367.05	1 099 761.19
Eastern hemlock	41 600.79	26 799.06	68 399.85
Western hemlock	615 383.94	3 768.56	619 152.51
Mountain hemlock	62 793.75	15.40	62 809.15
Western & mountain hemlock	514.14	-	514.14
Hemlocks subtotal	1 815 686.77	34 950.07	1 850 636.84
Douglas-fir	857 594.29	20 636.52	878 230.82
Tamarack/larch (general)	33 170.50	833.94	34 004.43
European larch	0.43	0.46	0.89
Tamarack	66 870.78	3 706.15	70 576.93
Western larch	36 246.62	304.27	36 550.88
Subalpine larch	297.31	0.74	298.05
Japanese larch	0.05	0.00	0.05
Larches subtotal	136 585.69	4 845.55	141 431.24
Eastern white-cedar	227 426.51	62 168.99	289 595.50
Western redcedar	722 907.92	2 394.14	725 302.06
Yellow cypress	97 406.81	1.29	97 408.10
Unspecified coniferous species	2 794 198.45	278 840.38	3 073 038.83

Table I-29. continued

First species	Coniferous	Broadleaved	Total
Other conifers subtotal	3 841 939.69	343 404.80	4 185 344.49
Poplar/aspen (general)	445 443.97	1 423 147.58	1 868 591.55
Trembling aspen	382 757.81	1 201 335.27	1 584 093.08
Balsam poplar	18 748.13	81 922.64	100 670.77
Eastern cottonwood	-	137.49	137.49
Largetooth aspen	2 012.38	11 157.52	13 169.90
Balsam poplar, largetooth aspen, & eastern cottonwood	1 208.27	3 801.18	5 009.45
Poplars subtotal	850 170.56	2 721 501.67	3 571 672.23
Birch (general)	3 403.75	11 277.60	14 681.35
Yellow birch	70 614.52	169 873.28	240 487.81
White birch	4 835.70	12 325.70	17 161.40
Gray birch	34.36	102.46	136.82
White birch & Alaska paper birch	274 412.54	622 227.47	896 640.02
White & gray birch	9 479.95	15 500.70	24 980.65
Birches subtotal	362 780.83	831 307.21	1 194 088.04
Maple (general)	16.95	19.49	36.44
Sugar maple	46 658.12	339 331.87	385 990.00
Bigleaf maple	951.38	3 872.66	4 824.04
Manitoba maple	6.06	3 346.93	3 352.99
Red maple	36 323.07	86 178.90	122 501.97
Sugar & black maple	50 856.22	374 999.37	425 855.59
Silver & red maple	16 693.24	71 350.40	88 043.64
Maples subtotal	151 505.04	879 099.62	1 030 604.67
Unspecified broadleaved species	57 943.09	252 676.38	310 619.47
Hickory	0.57	22.06	22.63
Bitternut	1.71	5.05	6.76
Red alder	8 758.50	27 055.98	35 814.48
Speckled alder	319.62	345.62	665.24
Ironwood	90.93	560.85	651.78
Beech	1 728.40	12 199.09	13 927.49
White oak	403.18	3 097.66	3 500.84
Bur oak	17.76	4 844.55	4 862.31
Red oak	11 748.55	59 422.92	71 171.47
Elm	67.30	482.37	549.67
White elm	6.65	1 001.18	1 007.83
Black cherry	88.93	843.40	932.32
Basswood	505.63	3 490.21	3 995.84
Ash (general)	80.87	1 073.31	1 154.19
White ash	29.45	347.26	376.71
Black ash	4 273.53	21 801.00	26 074.53
Red ash	26.90	2 414.53	2 441.43
Willow	0.22	58.46	58.69
Mountain-ash	0.04	0.04	0.08
Tolerant hardwoods	36 192.68	71 985.69	108 178.37
Intolerant hardwoods	67 161.87	137 875.18	205 037.05
Other hardwoods subtotal	189 446.39	601 602.79	791 049.18
Unclassified	93 813.85	93 616.51	187 430.36
Total	22 570 921.21	6 812 484.02	29 383 405.23

Table I-30. Total biomass (million t) on stocked forest land by leading species and component

Leading species	Live					Dead
	Stemwood	Stem bark	Branches	Foliage	Total	
Spruce (general)	788.13	109.20	167.83	100.70	1 165.86	158.42
Black spruce	2 286.76	346.46	402.25	377.93	3 413.70	269.18
Red spruce	6.05	0.94	1.40	0.60	8.98	0.60
Norway spruce	0.65	0.07	0.09	0.06	0.89	0.05
Engelmann spruce	80.10	11.43	17.10	11.77	120.40	14.14
White spruce	698.88	107.03	130.48	81.27	1 017.67	99.11
Sitka spruce	19.81	2.51	3.94	2.86	29.11	3.14
Black & red spruce	1 123.45	170.53	232.59	145.97	1 672.54	78.75
Red & white spruce	47.69	7.37	11.10	5.45	71.60	5.03
Spruce & balsam fir	3.69	0.58	0.85	0.35	5.47	0.41
Spruces subtotal	5 055.22	756.12	967.61	726.96	7 506.22	628.83
Pine (general)	7.03	1.37	1.14	0.61	10.15	0.78
Western white pine	2.80	0.40	0.61	0.32	4.13	0.41
Eastern white pine	114.78	17.57	25.70	10.51	168.56	6.83
Jack pine	801.04	105.65	113.51	85.67	1 105.88	67.45
Lodgepole pine	1 880.96	220.85	266.11	197.05	2 564.97	203.56
Whitebark pine	5.59	0.80	1.48	0.74	8.60	0.63
Austrian pine	0.00	0.00	0.00	0.00	0.00	-
Ponderosa pine	10.17	1.90	4.56	2.04	18.67	1.22
Red pine	19.17	2.43	3.25	2.08	26.93	1.17
Scots pine	2.25	0.26	0.35	0.20	3.06	0.07
Hybrid jack & lodgepole pine	18.46	2.37	2.09	1.59	24.51	1.45
Pines subtotal	2 862.23	353.61	418.79	300.83	3 935.45	283.58
Fir (general)	369.60	53.17	97.15	58.13	578.05	92.54
Amabilis fir	54.45	7.59	11.16	8.87	82.07	6.77
Balsam fir	662.12	109.89	154.92	117.04	1 045.26	50.48
Grand fir	0.05	0.01	0.03	0.03	0.13	0.01
Subalpine fir	288.19	43.65	95.32	52.08	479.24	87.71
Alpine, amabilis & grand fir	0.05	0.01	0.02	0.01	0.09	0.02
Japanese fir	0.00	0.00	0.00	0.00	0.00	-
Balsam fir & spruce	0.82	0.13	0.20	0.08	1.24	0.11
Firs subtotal	1 375.30	214.45	358.80	236.24	2 186.08	237.63
Hemlock (general)	635.46	85.67	110.66	65.97	897.76	125.57
Eastern hemlock	35.19	5.24	9.65	2.65	52.73	0.84
Western hemlock	371.06	52.40	75.65	44.87	543.99	73.36
Mountain hemlock	43.85	7.37	8.82	4.63	64.66	10.43
Western & mountain hemlock	0.33	0.05	0.07	0.03	0.48	0.07
Hemlocks subtotal	1 085.89	150.73	204.85	118.15	1 559.62	210.27
Douglas-fir	616.27	96.31	139.58	75.77	927.94	80.10
Tamarack/larch (general)	27.16	3.69	4.47	2.53	37.85	3.48
European larch	0.00	0.00	0.00	0.00	0.00	0.00
Tamarack	41.70	5.81	8.02	5.73	61.26	5.24
Western larch	31.76	4.13	4.99	3.02	43.90	3.62
Subalpine larch	0.34	0.04	0.06	0.04	0.47	0.03
Japanese larch	0.00	0.00	0.00	0.00	0.00	0.00
Larches subtotal	100.96	13.67	17.53	11.32	143.49	12.37

Table I-30. continued

Leading species	Stemwood	Stem bark	Live Branches	Foliage	Total	Dead
Eastern white-cedar	138.05	21.12	31.68	17.75	208.61	12.03
Western redcedar	436.61	56.75	81.66	44.68	619.70	96.68
Yellow cypress	70.42	7.30	9.18	5.50	92.40	17.74
Unspecified conifer species	2 731.82	420.80	441.04	449.02	4 042.78	466.82
Other conifers subtotal	3 376.89	505.97	563.56	516.95	4 963.49	593.26
Poplar/aspen (general)	1 034.01	201.59	160.19	68.46	1 464.24	191.03
Trembling aspen	983.62	201.09	157.32	70.81	1 412.84	108.31
European white poplar	0.00	0.00	0.00	0.00	0.00	0.00
Balsam poplar	66.47	12.04	13.05	4.67	96.22	7.82
Eastern cottonwood	0.06	0.02	0.01	0.00	0.09	0.01
Largetooth aspen	6.66	1.14	1.50	0.43	9.73	0.24
Hybrid poplar	0.00	0.00	0.00	0.00	0.00	-
Balsam poplar, largetooth aspen, & eastern cottonwood	2.86	0.49	0.63	0.24	4.21	0.11
Poplars subtotal	2 093.67	416.36	332.69	144.60	2 987.34	307.51
Birch (general)	16.49	2.81	3.12	1.43	23.86	2.22
Yellow birch	135.58	20.05	39.54	10.91	206.08	5.35
White birch	17.81	2.96	4.04	1.90	26.72	3.13
Gray birch	0.12	0.02	0.03	0.01	0.18	0.01
Alaska paper birch	0.01	0.00	0.00	0.00	0.01	0.00
Alaska paper & white birch	517.90	85.08	105.66	51.25	759.92	57.76
European birch	0.00	0.00	0.00	0.00	0.00	-
White & gray birch	17.02	2.83	4.56	1.59	26.01	1.73
Birches subtotal	704.94	113.76	156.96	67.10	1 042.79	70.21
Maple (general)	0.02	0.00	0.01	0.00	0.04	0.00
Sugar maple	233.98	32.05	70.04	13.19	349.27	8.48
Bigleaf maple	3.08	0.52	0.53	0.17	4.30	0.43
Manitoba maple	2.12	0.32	0.59	0.12	3.15	0.09
Red maple	75.89	11.40	20.07	5.88	113.25	4.04
Sugar & black maple	242.81	32.83	70.89	11.67	358.20	7.68
Silver & red maple	49.92	7.41	12.69	3.21	73.23	3.24
Maples subtotal	607.84	84.54	174.82	34.24	901.44	23.96
Unspecified broadleaves	185.44	37.69	32.08	14.73	269.95	34.28
Hickory	0.01	0.00	0.00	0.00	0.02	0.00
Butternut	0.00	0.00	0.00	0.00	0.01	0.00
Red alder	23.27	3.50	4.64	2.26	33.66	4.12
Speckled alder	1.56	0.24	0.32	0.22	2.33	0.14
Ironwood	0.40	0.06	0.11	0.02	0.59	0.02
Beech	8.54	1.14	2.50	0.47	12.65	0.34
Oak (general)	0.00	0.00	0.00	0.00	0.00	-
White oak	2.08	0.29	0.55	0.12	3.04	0.06
Bur oak	3.67	0.65	1.03	0.26	5.62	0.33
Red oak	40.17	5.77	11.14	2.32	59.41	1.67
Elm (general)	0.34	0.05	0.09	0.02	0.50	0.01
White elm	0.59	0.08	0.13	0.03	0.83	0.02
Black cherry	0.56	0.08	0.15	0.03	0.82	0.02

Table I-30. continued

Leading species	Stemwood	Stem bark	Live Branches	Foliage	Total	Dead
Honey-locust	0.00	0.00	0.00	0.00	0.00	-
Black locust	0.00	0.00	0.00	0.00	0.01	-
Basswood	2.23	0.32	0.61	0.12	3.29	0.06
Ash (general)	0.62	0.10	0.12	0.05	0.89	0.03
White ash	0.22	0.03	0.06	0.01	0.32	0.01
Black ash	15.46	2.31	3.88	1.05	22.70	0.82
Red ash	1.34	0.22	0.27	0.09	1.92	0.06
Willow (general)	0.04	0.00	0.01	0.00	0.05	0.00
Mountain-ash	0.00	0.00	0.00	0.00	0.00	0.00
Tolerant hardwoods	68.03	9.91	21.31	5.40	104.65	5.90
Intolerant hardwoods	134.06	27.06	31.01	10.92	203.05	12.24
Other hardwoods subtotal	488.63	89.52	110.02	38.12	726.29	60.13
Unclassified	204.26	34.66	38.02	19.11	296.04	19.19
Total	18 572.10	28 29.70	3 483.24	2 289.40	27 176.18	2 527.03

Table I-31. Area and volume netted down.

Province/ Territory	Area (million ha) and volume (million m^3) netting down									
	Forest & other wooded land		Forest land		Stocked forest		Not reserved stocked forest		Accessed not reserved stocked forest	
	Area	Volume	Area	Volume	Area	Volume	Area	Volume	Area	Volume
NL	20.07	562.24	10.73	562.24	7.79	562.24	7.72	556.89	2.85	220.13
NS	4.35	384.55	4.24	384.55	4.07	384.55	3.76	358.05	3.71	352.81
PE	0.27	31.46	0.26	31.46	0.25	31.46	0.25	31.35	0.25	31.33
NB	6.21	535.04	6.09	535.04	5.63	535.04	5.60	531.41	5.55	525.98
QC	84.58	4 645.11	73.36	4 645.11	65.36	4 645.11	64.70	4 574.60	31.66	3 031.53
ON	68.29	6 664.32	53.76	6 664.32	47.17	6 664.32	44.01	6 199.22	23.15	3 665.29
MB	36.35	734.63	18.97	734.63	16.34	734.63	15.08	667.52	6.22	379.41
SK	24.26	1 210.07	20.04	1 210.07	19.33	1 210.07	18.69	1 143.16	6.27	618.74
AB	36.39	2 535.73	27.72	2 535.73	25.74	2 535.73	22.33	2 318.10	13.25	1 572.51
BC	64.25	10 630.09	57.91	10 630.09	49.79	10 630.09	46.03	9 718.33	31.57	6 745.36
YT	22.79	553.43	7.88	553.43	4.73	553.43	4.60	546.99	1.20	146.39
NT	33.35	881.21	28.35	881.21	27.89	881.21	27.05	840.37	3.05	124.40
NU	0.94	15.53	0.81	15.53	0.81	15.53	0.81	15.53	0.00	0.03
Canada	402.08	29 383.41	310.13	29 383.41	274.92	29 383.41	260.64	27 501.51	128.74	17 413.91

Appendix II. CanFI2001 Codes and Descriptions

Province/Territory

Code	Description
0	Newfoundland and Labrador – Newfoundland
1	Newfoundland and Labrador – Labrador
2	Nova Scotia
3	Prince Edward Island
4	New Brunswick
5	Quebec
6	Ontario
7	Manitoba
8	Saskatchewan
9	Alberta
10	British Columbia
11	Yukon
12	Northwest Territories
13	Nunavut

Data Source

Code	Description	Definition
1	Reconnaissance	An exploratory, extensive inventory with no detailed estimates obtained
2	Regional	A detailed, extensive forest inventory for planning on a regional or provincial basis
3	Management	A detailed, intensive forest inventory for management purposes of an area managed as one unit
6	Satellite	Land classification based on satellite imagery
7	Other inventory sources	Ecological land classifications of national parks; record added by Canadian Forest Service
8	No information	

Ownership

Code	Description	Definition
11	Federal crown	Crown land within the jurisdiction of the federal government, except for land under the jurisdiction of Indian and Northern Affairs Canada.
12	Native	Land within an Indian Reserve or Indian Settlement
13	Provincial/territorial crown	Crown land within the jurisdiction of a provincial or territorial government or Northern Affairs of Indian and Northern Affairs Canada
14	Municipal	Land that is the property of a municipality or other government agency
20	Private unspecified	Land owned by corporations or individuals at an unknown scale of operation
21	Private industrial	Land owned by a large corporate industry for commercial forestry purposes
22	Private non-industrial	Land owned by corporations or individuals that may or may not be used for commercial forestry purposes
-8	Unknown	No information

Status

Code	Description	Definition
10	Reserved	Land that by law or policy is not available for timber harvest
21	Nonreserved - assigned	Crown-owned land no longer under the direct control of the Crown
22	Nonreserved - retained	Crown-owned land under the direct, immediate control of the Crown
23	Nonreserved - other	Land that is not reserved from timber harvest by law or policy
-8	Unknown	No information

Land Class

Code	Description	Definition
10000	Water (undifferentiated)	Includes lakes, rivers, streams, ponds, etc.
11000	Lake/pond/reservoir	
12000	Large lake	Lake with surface area larger than 4000 km^2
12001	St. Lawrence River	
13000	River/stream/flowage	
20000	Land (cover undifferentiated)	
21000	Nonvegetated (origin undifferentiated)	
21100	Naturally non-vegetated	
21110	Rock	Barren rock with less than 25% tree cover
21111	Rubble/talus/rock glacier	
21120	Sand	Sand with trees (if any) having less than 10% crown closure
21130	Barren soil	Area with <25% live tree cover containing ericaceous vegetation with <50% rock outcrops and <50% other woody plant cover. Area is not wet.
21140	Recent/unproductive burn	Severely burned forest land that is no longer forest due to factors such as the severity of the fire, erosion, and adverse microclimatic conditions
21150	Mud/salt flat	A tract of low muddy land near an estuary, covered at high tide and exposed at low tide, or a flat expanse of salt left by the evaporation of salt water
21151	Flooded land	Areas periodically inundated with water
21160	Gravel bar/stream channel	
21170	Clay bank/cut bank	
21180	Alpine	Includes nonforested land above timberline and contiguous areas of rock, glaciers, non-productive brush and snow slides
21190	Ice/icefield	
21200	Anthropogenically non-vegetated	Cleared land where cause not identified
21210	Cleared land	Land where vegetation has been removed
21220	Gravel pit/quarry/mine site/ oil field/peat extraction	Land cleared for the stated uses
21230	Urban/cities/residential	Land cleared for human habitation
21240	Right-of-way	Land cleared for roads, railways, power lines, and pipelines
21241	Road	Land cleared for roads
21242	Railway	Land cleared for railway lines
21243	Transmission line	Land cleared for transmission lines

Code	Description	Definition
21244	Pipeline	Land cleared for pipelines
21250	Airstrip	Land cleared for airstrips
21260	Harvested or burned	Firebreak or landing/slash pile area
22000	Vegetated (origin and type undifferentiated)	
22100	Naturally vegetation non-treed	
22110	Wetland	Wetlands not falling into categories below
22111	Muskeg/bog/fen	Wetlands typically covered by peat, having a saturated water regime, and frequently covered by ericaceous shrubs, sedges, and sphagnum moss
22112	Marsh	Wetland completely or partially covered with tall grass, rushes, or sedges and less than 25% cover of ericaceous woody plants
22113	Meadow	Land that may be flooded intermittently and usually contains an accumulation of peat, covered by sedges, reed grasses, rushes, and other hydrophytic vegetation with larger shrubs amounting to less than 50% of the vegetative cover
22114	Shrub	Similar to meadow, except that the larger shrubs (willow, alder, etc.) amount to more than 50% of the vegetative cover
22115	Supertidal marsh	Coastal marshes of the Hudson Bay – James Bay Lowland lying inland of the coastal mudflat and intertidal marsh areas and subject to only exceptionally high tides
22120	Upland shrub	
22121	Alders	Land (not wetland) where the dominant vegetation is alders
22122	Brush/avalanche scrub/ riparian banks	Shrubby areas not on lowlands, on avalanche tracks, and along rivers or streams
22130	Other	
22131	Grassland/meadow	Moist, low lying and usually flat land with sedges and graminoids predominant
22132	Open range	Nonforested range that may have from 6 to 10% crown cover of trees
22133	Mosses	Mosses and/or bryophytes
22134	Tundra – shrub and lichen	Barren land in which shrubs and lichen are the dominant cover type
22135	Tundra heath	Areas of dense ericaceous vegetation occurring on better-drained land
22136	Alvar	Grasslands on calcareous soils
22200	Anthropogenically vegetated non-treed	
22210	Agriculture/crops	Land cleared for agriculture purposes – includes farm crops, market gardens, orchards, hay fields, blueberry production, etc.
22220	Pasture	Open grassland (primarily used for grazing livestock) with less than 10% crown closure of woody shrubs
22300	Vegetated treed	
22310	Wetland	

Code	Description	Definition
22311	Treed muskeg/treed bog	Like muskeg/bog/fen but with more than 10% crown closure of trees
22312	Forested wetland/swamp	Low land that is seasonally flooded and has more woody plants than a marsh and better drainage than a bog
22320	Scattered	
22321	Treed rock	Rock with very shallow soil with tree cover amounting to more than 10% crown closure
22322	Small island/shelter belt	Areas of trees less than 2 ha in size or running in a belt along field edges and usually planted
22323	Alpine forest	High elevation forest located adjacent to alpine areas
22324	Wooded prairie/aspen parkland	Deciduous forests of trembling aspen, willow, white birch, balsam poplar, white elm, green ash, and Manitoba maple are intermingled with grassland, with a pattern of grasslands on ridges and south-facing slopes and trees in depressions and north-facing slopes
22325	Wind swept/stunted	Very open, sparse, patchy, stunted. Coniferous and deciduous scrub
22330	Recreation	Golf courses, camp grounds, recreational sites
22340	Forest	A plant community predominantly of trees and other woody vegetation, growing more or less closely together
-8	Missing value	No information

Site Quality

Code	Description
7.5	Site class 1: Trees grow to 5.0 to 9.9 m in height at 50 years (100 years in Yukon)
12.5	Site class 2: Trees grow to 10.0 to 14.9 m in height at 50 years (100 years in Yukon)
17.5	Site class 3: Trees grow to 15.0 to 19.9 m in height at 50 years (100 years in Yukon)
22.5	Site class 4: Trees grow to 20.0 to 24.9 m in height at 50 years (100 years in Yukon)
27.5	Site class 5: Trees grow to 25.0 to 29.9 m in height at 50 years (100 years in Yukon)
32.5	Site class 6: Trees grow to 30.0 to 34.9 m in height at 50 years (100 years in Yukon)
37.5	Site class 7: Trees grow to 35.0 m and greater in height at 50 years (100 years in Yukon)
-8	Missing value – no information
-9	Not applicable – for land classes other than forest (22340)

Stocking Class

Code	Class	Definition
100	Nonstocked	Forest land that lacks trees completely or that is so deficient in trees, either young or old, that the residual stand trees, if any, is insufficient to allow for use according to the management objectives for the land
200	Stocking not known	Forest land that has tree cover removed or killed (reason not specified) and the subsequent degree of stocking has not been assessed
210	Disturbed	Forest land that has tree cover removed or killed by some disturbance (not specified) and the subsequent degree of stocking has not been assessed
211	Burn	Forest land that has tree cover removed or killed by fire and the subsequent degree of stocking has not been assessed

Code	Class	Definition
212	Harvest	Forest land that has tree cover removed or killed by harvesting and the subsequent degree of stocking has not been assessed
213	Windthrow	Forest land that has tree cover removed or killed by windthrow and the subsequent degree of stocking has not been assessed
214	Insect/disease	Forest land that has tree cover removed or killed by insect or disease and the subsequent degree of stocking has not been assessed
215	Other disturbance	Forest land that has tree cover removed or killed by other disturbance and the subsequent degree of stocking has not been assessed
216	Abandoned farmland	Abandoned farmland that is returning to forest cover where stocking has not been assessed
220	Not measured	Forest land where stocking is not known because it has not been assessed
221	Experimental areas	Seed orchards
300	Stocked	Land supporting tree growth, density not specified
310	Regenerating/plantation	Planted or seeded areas not yet tall enough for the degree of stocking to be assessed
320	Partially	Stocked forest land where yield is significantly reduced and treatment may be considered
330	Fully	Stocked forest land where yield is generally reasonable for extensive management and treatment is generally not considered
-8	Missing value	No information
-9	Not applicable	For land classes other than forest

Age Class

Code	Class
0	1 to 5 years
1	1 to 20 years
2	21 to 40 years
3	41 to 60 years
4	61 to 80 years
5	81 to 100 years
6	101 to 120 years
7	121 to 140 years
8	141 to 160 years
9	161 to 180 years
10	181 to 200 years
11	201 to 220 years
12	221 to 240 years
13	241 to 260 years
14	261 to 280 years
15	281 to 300 years
16	301 to 320 years
17	321 to 340 years
18	341 to 360 years
19	361 to 380 years
20	380 to 400 years
21	401+ years
-5	Uneven-aged
-8	Missing value
-9	Not applicable—not stocked forest

Maturity Class

Code	Class	Definition
1	Regeneration	The renewal of a forest crop by natural or artificial means. Also the new crop so obtained (5). The new crop is generally less than 1.3 m in height (1). In this context it is the new crop, not the act of renewal, that is being described. CanFI data may include volume of trees that survived disturbances such as fire or harvesting.
2	Immature	In even-aged management, those trees or stands that have grown past the regeneration stage but are not yet mature.
3	Mature	In even-aged management, those trees or stands that are significantly developed to be harvestable and that are at or near rotation age (includes overmature trees and stands if an overmature class has not been recognized) (1).
4	Overmature	In even-aged management, those trees or stands past the mature stage (1).
5	Uneven-aged	A forest, stand, or forest type in which relatively small differences exist between individual trees(1). To be classified as even-aged, the maximum difference in age permitted it is usually 10 to 20 years; if the stand will not be harvested until it is 100 to 200 years old, larger differences of up to 25 percent of the rotation age may be allowed.
-8	Missing value	No information available
-9	Not applicable	For records that are not stocked forest land

Forest Type

Code	Class	Definition
1	Softwood	Stocked forest land where 76 to 100% of the canopy is coniferous
2	Mixedwood	Stocked forest land where 26 to 75% of the canopy is coniferous
3	Hardwood	Stocked forest land where 0 to 25% of the canopy is coniferous
-8	Missing value	No information available
-9	Not applicable	For records that are not stocked forest land

Predominant Genus

Code	Class	Definition
1	Spruce	Most abundant tree genus is *Picea*
2	Pine	Most abundant tree genus is *Pinus*
3	Fir	Most abundant tree genus is *Abies*
4	Hemlock	Most abundant tree genus is *Tsuga*
5	Douglas-fir	Most abundant tree genus is *Pseudotsuga*
6	Larch	Most abundant genus is *Larix*
7	Cedar and other conifers	Most abundant genus is one of *Thuja, Juniperus, Taxus,* or *Chamaecyparis*
8	Unspecified conifers	Most abundant genus identified as conifer only
9	Poplar	Most abundant tree genus is *Populus*
10	Birch	Most abundant tree genus is *Betula*
11	Maple	Most abundant tree genus is *Acer*
12	Other broadleaved species	Most abundant genus is one of *Carya, Juglans, Alnus, Ostrya, Carpinus, Fagus, Quercus, Ulmus, Morus, Liriodendron, Magnolia, Sassafras, Platanus, Prunus, Gleditsia, Robinia, Tilia, Nyssa, Cornus, Arbutus, Fraxinus, Salix, Gymnocladus, Celtis, Amelanchier, Corylus, Crataegus, Ilex, Malus, Nemopanthus, Rhus,* or *Sorbus*
13	Unspecified broadleaved species	Most abundant genus identified as broadleaved only
-8	Missing value	No information available
-9	Not applicable	For records that are not stocked forest land

First Species

Code	Common name	Scientific name
100	Spruce	*Picea*
101	Black spruce	*Picea mariana* (Mill.) BSP
102	Red spruce	*Picea rubens* Sarg.
103	Norway spruce	*Picea abies* (L.) Karst.
104	Engelmann spruce	*Picea engelmannii* Parry ex Engelm.
105	White spruce	*Picea glauca* (Moench) Voss
106	Sitka spruce	*Picea sitchensis* (Bong.) Carrière
107	Black and red spruce	*Picea mariana* (Mill.) BSP and *Picea rubens* Sarg.
108	Red and white spruce	*Picea rubens* Sarg. and *Picea glauca* (Moench) Voss
109	Other spruce	*Picea* spp. excluding *P. mariana* and *P. rubens*
110	Spruce and balsam fir	*Picea spp.* and *Abies balsamea* (L.) Mill.
200	Pine	*Pinus*
201	Western white pine	*Pinus monticola* Dougl. ex D. Don
202	Eastern white pine	*Pinus strobus* L.
203	Jack pine	*Pinus banksiana* Lamb.
204	Lodgepole pine	*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm.
205	Shore pine	*Pinus contorta* var. *contorta*
206	Whitebark pine	*Pinus albicaulis* Engelm.
207	Austrian pine	*Pinus nigra* Arnold
208	Ponderosa pine	*Pinus ponderosa* P. Laws. ex C. Laws.
209	Red pine	*Pinus resinosa* Ait.
210	Pitch pine	*Pinus rigida* Mill.
211	Scots pine	*Pinus sylvestris* L.
212	Mugho pine	*Pinus mugo* Turra
213	Limber pine	*Pinus flexilis* James
214	Jack, lodgepole, and shore pine	*Pinus banksiana* Lamb., *Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm., and *Pinus contorta* var. *contorta*
215	Other pine	*Pinus spp.* excluding the two white pines, and the jack pine group
216	Hybrid jack and lodgepole pine	
217	Whitebark and limber pine	*Pinus albicaulis* Engelm. and *Pinus flexilis* James
300	Fir	*Abies*
301	Amabilis fir	*Abies amabilis* (Dougl. ex Loud.) Dougl. ex. J. Forbes
302	Balsam fir	*Abies balsamea* (L.) Mill.
303	Grand fir	*Abies grandis* (Dougl. ex D. Don) Lindl.
304	Subalpine fir (or alpine fir)	*Abies lasiocarpa* (Hook.) Nutt.
305	Balsam and alpine fir	*Abies balsamea* (L.) Mill. and *Abies lasiocarpa* (Hook.) Nutt.
306	Alpine, amabilis, and grand fir	*Abies lasiocarpa* (Hook.) Nutt., *Abies amabilis* (Dougl. ex Loud.) Dougl. ex. J. Forbes, and *Abies grandis* (Dougl. ex D. Don) Lindl.
307	Japanese fir	*Abies firma*
320	Spruce and balsam fir	*Picea* and *Abies balsamea* (L.) Mill.
321	Balsam fir and spruce	*Abies balsamea* (L.) Mill. and *Picea*
400	Hemlock	*Tsuga*
401	Eastern hemlock	*Tsuga canadensis* (L.) Carrière
402	Western hemlock	*Tsuga heterophylla* (Raf.) Sarg.
403	Mountain hemlock	*Tsuga mertensiana* (Bong.) Carrière
404	Western and mountain hemlock	*Tsuga heterophylla* (Raf.) Sarg. and *Tsuga mertensiana* (Bong.) Carrière

Code	Common name	Scientific name
500	Douglas-fir and Rocky Mountain Douglas-fir	*Pseudotsuga menziesii* var. *menziesii*(Mirb.) Franco, and *Pseudotsuga menziesii* var. *glauca* (Beissn.) Franco
600	Tamarack/larch	*Larix*
601	European larch	*Larix decidua* Mill.
602	Tamarack	*Larix laricina* (Du Roi) K. Koch
603	Western larch	*Larix occidentalis* Nutt.
604	Subalpine larch	*Larix lyallii* Parl.
605	Japanese larch	*Larix kaempferi* (Lamb.) Carrière
700	Cedar	*Thuja*
701	Eastern white-cedar	*Thuja occidentalis* L.
702	Western redcedar	*Thuja plicata* Donn ex D. Don
703	Cedar and other conifers	*Thuja*, *Juniperus*, *Taxus*, and *Chamaecyparis*
800	Juniper	*Juniperus*
801	Eastern redcedar	*Juniperus virginiana* L.
802	Rocky Mountain juniper	*Juniperus scopulorum* Sarg.
900	Yew	*Taxus*
901	Western yew	*Taxus brevifolia* Nutt.
1000	Cypress	*Chamaecyparis*
1001	Yellow cypress	*Chamaecyparis nootkatensis* (D. Don) Spach
1100	Other softwoods/other conifers	
1110	Tamarck and cedar	*Larix* and *Thuja*
1150	Unspecified softwood species	
1200	Poplar/aspen	*Populus*
1201	Trembling aspen	*Populus tremuloides* Michx.
1202	European white poplar	*Populus alba* L.
1203	Balsam poplar	*Populus balsamifera* L.
1204	Black cottonwood	*Populus trichocarpa* Torr. & A. Gray
1205	Eastern cottonwood	*Populus deltoides* Bartr. ex Marsh. ssp. *deltoides*
1206	Largetooth aspen	*Populus grandidentata* Michx.
1207	Carolina poplar	*Populus* × *canadensis* Moench cv. Eugenei
1208	Lombardy poplar	*Populus nigra* L. cv. Italica
1209	Hybrid poplar	*Populus* spp. × *Populus* spp.
1210	Other poplar	*Populus* spp. excluding *P. tremuloides*
1211	Balsam poplar, largetooth aspen & eastern cottonwood	
1212	Balasm poplar & black cottonwood	
1300	Birch	*Betula*
1301	Yellow birch	*Betula alleghaniensis* Britt.
1302	Cherry birch	*Betula lenta* L.
1303	White birch	*Betula papyrifera* Marsh.
1304	Gray birch	*Betula populifolia* Marsh.
1305	Alaska paper birch	*Betula neoalaskana* Sarg.
1306	Mountain paper birch	*Betula cordifolia* Regel
1307	Other birch	*Betula* spp. excluding *B. alleghaniensis*
1308	Alaska paper and white birch	*Betula neoalaskana* Sarg. and *Betula papyrifera* Marsh.
1309	European birch	*Betula pendula* Roth. syn. *B. verrucosa* Ehrh.
1310	White & gray birch	
1400	Maple	*Acer*
1401	Sugar maple	*Acer saccharum* Marsh.
1402	Black maple	*Acer nigrum* Michx.
1403	Bigleaf maple	*Acer macrophyllum* Pursh

Code	Common name	Scientific name
1404	Manitoba maple	*Acer negundo* L.
1405	Red maple	*Acer rubrum* L.
1406	Silver maple	*Acer saccharinum* L.
1407	Norway maple	*Acer platanoides* L.
1408	Sugar and black maple	*Acer saccharum* Marsh. and *Acer nigrum* Michx.
1409	Other maple	*Acer* spp. excluding *A. saccharum* and *A. nigrum*
1410	Striped maple	*Acer pensylvanicum* L.
1411	Mountain maple	*Acer spicatum* Lamb.
1412	Silver and red maple	*Acer platanoides* L. and *Acer rubrum* L.
1500	Other hardwoods/other broad-leaved species	Broad-leaved spp. excluding *Populus, Betula* and *Acer* spp.
1550	Unspecified hardwood species	
1600	Hickory	*Carya*
1601	Bitternut hickory	*Carya cordiformis* (Wangenh.) K. Koch
1602	Red hickory (Pignut hickory)	*Carya glabra* (Mill.) Sweet var. *odorata* (Marsh.) Little
1603	Shagbark hickory	*Carya ovata* (Mill.) K. Koch
1604	Shellbark hickory	*Carya laciniosa* Michx. f.
1700	Walnut	*Juglans*
1701	Butternut	*Juglans cinerea* L.
1702	Black walnut	*Juglans nigra* L.
1800	Alder	*Alnus*
1801	Sitka alder	*Alnus viridis* ssp. *sinuata* (Regel) Á. Löve & D. Löve
1802	Red alder	*Alnus rubra* Bong.
1803	Green Alder	*Alnus incana* ssp. *tenuifolia* (Nutt.) Breit.
1804	Mountain alder	*Alnus viridis* ssp. *crispa* (Ait.) Turrill
1805	Speckled alder	*Alnus incana* ssp. *rugosa* (Du Roi) J. Clausen
1900	Ironwood (hop-hornbeam)	*Ostrya virginiana* (Mill.) K. Koch
1950	Blue-beech (American hornbeam)	*Carpinus caroliniana* Walt.
2000	Beech	*Fagus grandifolia* Ehrh.
2100	Oak	*Quercus*
2101	White oak	*Quercus alba* L.
2102	Swamp white oak	*Quercus bicolor* Willd.
2103	Garry oak	*Quercus garryana* Dougl.
2104	Bur oak	*Quercus macrocarpa* Michx.
2105	Pin oak	*Quercus palustris* Muenchh.
2106	Chinquapin oak	*Quercus muehlenbergii* Engelm.
2107	Chestnut oak	*Quercus montana* Willd.
2108	Red oak	*Quercus rubra* L.
2109	Black oak	*Quercus velutina* Lam.
2110	Northern pin oak	*Quercus ellipsoidelis* E.J. Hill
2111	Shumard oak	*Quercus shumardii* Buckl.
2200	Elm	*Ulmus*
2201	White elm	*Ulmus americana* L.
2202	Slippery elm	*Ulmus rubra* Muhl.
2203	Rock elm	*Ulmus thomasii* Sarg.
2300	Red mulberry	*Morus rubra* L.
2400	Tulip-tree	*Liriodendron tulipifera* L.
2500	Cucumber-tree	*Magnolia acuminata* L.
2600	Sassafras	*Sassafras albidum* (Nutt.) Nees
2700	Sycamore	*Platanus occidentalis* L.
2800	Cherry	*Prunus*

Code	Common name	Scientific name
2801	Black cherry	*Prunus serotina* Ehrh.
2802	Pin cherry	*Prunus pensylvanica* L. f.
2803	Bitter cherry	*Prunus emarginata* Dougl.
2804	Choke cherry	*Prunus virginiana* L. var. *virginiana*
2900	Honey-locust	*Gleditsia triacanthos* L.
2901	Black locust	*Robinia pseudoacacia* L.
3000	Basswood	*Tilia americana* L.
3100	Black-gum	*Nyssa sylvatica* Marsh.
3200	Flowering dogwood	*Cornus*
3201	Eastern flowering dogwood	*Cornus florida* L.
3202	Western flowering dogwood	*Cornus nuttallii* Audubon
3203	Alternate-leaf dogwood	*Cornus alternifolia* L. f.
3300	Arbutus	*Arbutus menziesii* Pursh
3400	Ash	*Fraxinus*
3401	White ash	*Fraxinus americana* L.
3402	Black ash	*Fraxinus nigra* Marsh.
3403	Red ash	*Fraxinus pennsylvanica* Marsh.
3404	Northern red ash	*Fraxinus pennsylvanica* var. *austini* Fern.
3405	Green ash	*Fraxinus pennsylvanica* var. *subintegerrima* (Vahl) Fern.
3406	Blue ash	*Fraxinus quadrangulata* Michx.
3407	Oregon ash	*Fraxinus latifolia* Benth.
3408	Pumpkin ash	*Fraxinus profunda* (Bush) Bush
3500	Willow	*Salix*
3501	Black willow	*Salix nigra* Marsh.
3502	Peachleaf willow	*Salix amygdaloides* Andersson
3503	Pacific willow	*Salix lucida* ssp. *lasiandra* (Benth.) E. Murr.
3504	Crack willow	*Salix fragilis* L.
3505	Shining willow	*Salix lucida* Muhl. ssp. *lucida*
3600	Kentucky coffee tree	*Gymnocladus dioicus* (L.) K. Koch
3700	Hackberry	*Celtis occidentalis* L.
3800	Serviceberry	*Amelanchier* genus
3900	Beaked hazel	*Corylus cornuta* Marsh.
3910	Hawthorn	*Crataegus* genus
3920	Common winterberry (black-alder)	*Ilex verticillata* (L.) A. Gray
3930	Apple	*Malus* genus
3940	Mountain-holly	*Nemopanthus mucronatus* (L.) Trel.
3950	Staghorn sumac	*Rhus typhina* L.
3960	Mountain-ash	*Sorbus* genus
4000	Tolerant hardwoods	Shade-tolerant species like beech, sugar maple, and yellow birch
4500	Upland hardwoods	All tolerant hardwoods except hard maple and lowland hardwoods
5000	Intolerant hardwoods	Shade-intolerant species such as trembling aspen and white birch
5500	Lowland hardwoods	Black ash, white elm, and soft (red) maple

Volume Type

Code	Class
0	Volume zero and no volume expected and because the maturity class was "regeneration" or the age class was less than 20 years it was not appropriate to insert a regional average volume
1	Volume data from the source agency
2	Volume added when volume found to be missing: by phase, forest section, site quality, age class, and first species
3	by forest section, site quality, age class, and first species
4	by forest region, site quality, age class, and first species
5	by forest region, age class, and first species
6	by forest region and first species
7	by forest region
8	By province
-7	Volume zero, land class and all other classes are missing (i.e. no information about whether it is a forested record, or about stocking, age, maturity, etc.)
-6	Volume zero, land class is forest, but all other classes are missing (i.e. no information about stocking class, age, maturity, etc.)
-9	Volume not applicable (not a stocked forest record)

Inventory Phase

Province	Phase #	Description
NL	3	CanFI91 - Island Global
	11	CanFI91 - Island Management
	12	CanFI91 - New Island Management
	13	New provincial data
	14	CFS 2003 - land class -8
	102	CanFI91 - Labrador Management
	104	CanFI91 - Labrador Intensive
	105	CanFI91 - Labrador Extensive
	114	New provincial data
	115	AVHRR
NS	204	New provincial data
	205	Sable Island
PE	301	New provincial data
NB	401	New provincial data
	402	Kouchibouguac National Park
	403	Irving land (map 3523)
QC	501	AVHRR
	503	CanFI91 - 1st Decennial Inventory
	505	CanFI91 - 2nd Decennial Inventory
	506	New data - 3rd Decennial Inventory
ON	601	Landsat North
	602	New provincial data - FRI
	604	Landsat South
	611	CFS 2003 - Great Lakes + other
MB	701	AVHRR
	702	New provincial data

Province	Phase #	Description
SK	801	SPOT VGT
	802	Township inventory
	803	UTM inventory
	804	South Digital Land Classification
AB	901	CanFI91 - Northern Reconn. Peace R.
	902	CanFI91 - from CanFI86
	903	CanFI91 - from CanFI81
	904	Alberta Phase 3 data
	905	CanFI91 - Phase 3 + AVI
	906	CanFI91 - AVI
	907	Alberta Ground Cover Classification
	908	Wood Buffalo National Park
	909	Native Prairie Baseline Data (NPBD)
	910	Prairie Farm Rehab. Admin. - east
	911	Prairie Farm Rehab. Admin. - Peace R.
	912	New Alberta Vegetation Inventory (AVI)
	913	SPOT VGT
BC	1011	Timber Supply Area
	1012	Parks
	1013	Tree Farm Licences
	1014	Gwaii Hanaas National Park
	1015	SPOT VGT
	1016	AVHRR
YT	1101	AVHRR
	1102	New territorial data
	1103	CanFI91 - from CanFI86
	1104	CanFI91 - from CanFI81
	1105	CanFI91
NT	1201	AVHRR
	1202	SPOT VGT
NU	1301	AVHRR
	1302	SPOT VGT

Utilization Specifications for Volumes

Province/ territory	Type of volume	Minimum dbh (cm)	Top dib (cm)	Stump height (cm)
NL	Gross merchantable	9.0	7.6[a]	15
NS	Gross merchantable	9.0	7.0	15
PE	Gross merchantable	9.0	8.0	15
NB	Gross merchantable	9.1	8.0	15
QC	Gross merchantable	9.0	9.0[a]	15
ON	Gross merchantable	9.0	7.0	30
MB	Gross merchantable	9.1	7.6	30
SK	Gross merchantable	7.0	7.0	30
AB	Gross merchantable	13.5	10.0	30
BC	Net merchantable	12.5[b] 17.5[c]	10.0	30
YT	Gross merchantable	15.0	10.0	30
NT	Gross merchantable	10.2	10.2	30
NU	Gross merchantable	9.0	9.0	15

[a] The top diameter is measured outside the bark for Newfoundland and Labrador and Quebec

[b] Minimum dbh for lodgepole pine and deciduous leading stands.

[c] Minimum dbh for all other species.

Appendix III. Data Formats

Data Format

Each record in the attribute database has the following format:

Column number	Column name	Data type	
1	PROVINCE	Number (2)	
2	PHASE	Number (4)	
3	SUMMARY UNIT	Varchar2 (10)	
4	MAPPING_LABEL	Varchar2 (10)	
5	ECOZONE	Number (2)	
6	ECOREGION	Number (3)	
7	FOREST_REGION	Number (2)	
8	FOREST_SECTION	Number (5)	
9	BOREAL	Number (1)	
10	OWNERSHIP	Number (2)	
11	STATUS	Number (2)	
12	PROTECTION	Number (1)	
13	LAND_CLASS	Number (5)	
14	SITE_QUALITY	Number (3.1)	
15	STOCKING_CLASS	Number (3)	
16	AGE_CLASS	Number (2)	
17	MATURITY_CLASS	Number (1)	
18	FOREST_TYPE	Number (1)	
19	PREDOMINANT_GENUS	Number (2)	
20	FIRST_SPECIES	Number (4)	
21	AREA	Number	
22	VOLUME_ID	Number (7)	← link to volume tables
23	VOL_TYPE	Number (1)	
24	CONIF_VOL	Number	
25	BROADL_VOL	Number	
26	TOTAL_VOL	Number	
27	CONIF_VPHA	Number	
28	BROADL_VPHA	Number	
29	TOTAL_VPHA	Number	
30	DATA_SOURCE_ID	Number (3)	← link to data source description table
31	ACCESSED	Number (1)	

Volume_id is a link to the species-level volume table for each province. The species detail volumes are stored separately from the area description tables to save space, as not all records in the area table have volume (all the records that are not stocked forest land), and as the same volume record may be used for a number of area records. There are two formats for volume tables. One (volume rank table) lists the species code and species volume in ranked order of volume for each volume_id; the other (volume description table) lists the species code, species volume, and species rank for each volume_id. The latter table facilitates retrievals by species codes, whereas the former resembles the traditional format of volume tables.

Volume description table format:

Column number	Column name	Data type	
1	VOLUME_ID	Number (7)	← link to area table
2	SPECIES1	Number (4)	
3	SP1_VOLUME	Number	
4	SPECIES2	Number (4)	
5	SP2_VOLUME	Number	
6	SPECIES3	Number (4)	
7	SP3_VOLUME	Number	
8	SPECIES4	Number (4)	
9	SP4_VOLUME	Number	
10	SPECIES5	Number (4)	
11	SP5_VOLUME	Number	
12	SPECIES6	Number (4)	
13	SP6_VOLUME	Number	
14	SPECIES7	Number (4)	
15	SP7_VOLUME	Number	
16	SPECIES8	Number (4)	
17	SP8_VOLUME	Number	
18	SPECIES9	Number (4)	
19	SP9_VOLUME	Number	
20	SPECIES10	Number (4)	
21	SP10_VOLUME	Number	
22	SPECIES11	Number (4)	
23	SP11_VOLUME	Number	
24	SPECIES12	Number (4)	
25	SP12_VOLUME	Number	
26	SPECIES13	Number (4)	
27	SP13_VOLUME	Number	
28	SPECIES14	Number (4)	
29	SP14_VOLUME	Number	
30	SPECIES15	Number (4)	
31	SP15_VOLUME	Number	
32	SPECIES16	Number (4)	
33	SP16_VOLUME	Number	
34	SPECIES17	Number (4)	
35	SP17_VOLUME	Number	
36	SPECIES18	Number (4)	
37	SP18_VOLUME	Number	
38	SPECIES19	Number (4)	
39	SP19_VOLUME	Number	
40	SPECIES20	Number (4)	
41	SP20_VOLUME	Number	
42	SPECIES21	Number (4)	
43	SP21_VOLUME	Number	
44	SPECIES22	Number (4)	
45	SP22_VOLUME	Number	
46	SPECIES23	Number (4)	
47	SP23_VOLUME	Number	
48	SPECIES24	Number (4)	
49	SP24 VOLUME	Number	
50	SPECIES25	Number (4)	
51	SP25_VOLUME	Number	
52	SPECIES26	Number (4)	
53	SP26_VOLUME	Number	

Volume rank table format

Column number	Column name	Data type	
1	VOLUME_ID	Number (7)	← link to area table
2	SPECIES_CODE	Number (4)	
3	SPECIES_VOLUME	Number	
4	RANK	Number	

The data source description table contains information about the type of inventory and when it was collected and updated. The format is as follows:

Column number	Column name	Data type	
1	DATA_SOURCE_ID	Number (7)	← link to area table
2	DATA_SOURCE	Number (4)	
3	YEAR_COLLECTED	Number	
4	YEAR_UPDATED	Number	

Canadian Forest Service Contacts

For more information about the Canadian Forest Service, visit our website at
cfs.nrcan.gc.ca
or contact any of the following Canadian Forest Service establishments

1 Atlantic Forestry Centre
P.O. Box 4000
Fredericton, NB E3B 5P7
Tel.: (506) 452-3500 Fax: (506) 452-3525
cfs.nrcan.gc.ca/regions/afc

Atlantic Forestry Centre – District Office
Sir Wilfred Grenfell College Forestry Centre
University Drive
Corner Brook, Newfoundland A2H 6P9
Tel.: (709) 637-4900 Fax: (709) 637-4910

2 Laurentian Forestry Centre
1055 du P.E.P.S., P.O. Box 10380
Sainte-Foy, PQ G1V 4C7
Tel.: (418) 648-5788 Fax: (418) 648-5849
cfs.nrcan.gc.ca/regions/lfc

3 Great Lakes Forestry Centre
P.O. Box 490 1219 Queen St. East
Sault Ste. Marie, ON P6A 5M7
Tel.: (705) 949-9461 Fax: (705) 759-5700
cfs.nrcan.gc.ca/regions/glfc

4 Northern Forestry Centre
5320-122nd Street
Edmonton, AB T6H 3S5
Tel.: (403) 435-7210 Fax: (403) 435-7359
cfs.nrcan.gc.ca/regions/nofc

5 Pacific Forestry Centre
506 West Burnside Road
Victoria, BC V8Z 1M5
Tel.: (250) 363-0600 Fax: (250) 363-0775
cfs.nrcan.gc.ca/regions/pfc

6 Headquarters
580 Booth St., 8th Fl.
Ottawa, ON K1A 0E4
Tel.: (613) 947-7341 Fax: (613) 947-7396
cfs.nrcan.gc.ca/regions/ncr

To order publications on-line, visit the Canadian Forest Service Bookstore at:
bookstore.cfs.nrcan.gc.ca

QP#4500155947